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ADDRESS IN SYPHILOGRAPHY.

SYPHILIS AS A NON-VENEREAL DISEASE.

Address of the Chairman at the first session of the Section on Dermatology and Syphilography, at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May 8, 1888.

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Gentlemen :—It gives me special pleasure to address you on this occasion, marking as it does an epoch in the history of the American Medical Association, which consequently should be regarded as an event of importance in American Medicine. We gather here to-day at the first meeting of the Section on Dermatology and Syphilography, of the American Medical Association, and in a measure to celebrate the recognition of this branch of medicine as a special department by the great representative medical organization of America. It is, therefore, an occasion in which those interested in this department of study and practice should feel a peculiar interest, and should particularly rejoice, for it certainly indicates an advance in medical thought and liberality, a broadening of the field of work of our Association, and, it is to be hoped, a benefit to the profession and community.

I will not occupy your time by tracing the rise of American dermatology, or detailing the elements which have contributed to bring it to its present position, as these topics have been freely handled by abler pens than mine in the Addresses of the Presidents of the American Dermatological Association, nor shall I attempt to present a sketch of the recent progress in this department, as is frequently done in such addresses, for the present current literature and the rapid multiplication of text-books renders these *résumés* less necessary and of less practical value. But I shall shortly direct your attention to a subject which I trust will prove as interesting to you as it has been to me, and which, I hope, may be the means of ultimately effecting some good. The present Section is organized for work, for the practical consideration of topics related to diseases of the skin, and it is hoped that it will contribute greatly to making dermatology a more interesting and successful field of labor, not only to those particularly engaged in this line of practice, but also to the general practitioner, to whom this branch often presents unusual difficulties.

The title which has been given to this Section is that of Dermatology and Syphilography, in order, no doubt, to directly interest the largest number of persons possible, who might not otherwise consider that syphilis belonged properly to this Section. While there is no practical objection to the name as it now stands, it is in a measure tautological, for syphilis should in reality be no more specially mentioned than any other one of the great diseases which affect the skin, although it is undoubtedly the most important of all, and ranks hardly second to any other disease affecting the human race, both in its clinical and pathological importance. But syphilis belongs naturally to this group of diseases for reasons which are easily seen. Thus:

1. In a very large share of instances the disease gains admission through the skin, or contiguous mucous membrane, and the primary lesion then resulting becomes a sore or ulcer which is diagnosed from other cutaneous ulcerations which may resemble it.

2. Syphilis almost invariably exhibits an eruption on the skin at some period during its existence, and the manifestations of syphilis on the skin are among its most constant symptoms, far more certainly than can be asserted of any other organ or tissue of the body.

3. Syphilis is almost always diagnosticated by means of its cutaneous lesions, indeed it is generally questioned very seriously if the patient has had syphilis if there are no lesions of the skin, past or present, from which to form a diagnosis.

Syphilis has heretofore been regarded principally as a venereal disease, and is found treated of specially in works relating to this subject. But in the light of our present knowledge of the disease and the frequency with which it is communicated innocently, both by contagion and inheritance, we are no longer justified in regarding it solely as an accompaniment of vice, or the scourge of those who have committed sexual errors. In the further development of the subject I will briefly present some of the recorded facts in regard to

SYPHILIS AS A NON-VENEREAL DISEASE.[1]

In using the expression "non-venereal disease" in this connection I refer, as may be imagined, to the communication of syphilis by other means than illicit sexual intercourse, for marital syphilis, as will be seen, furnishes annually a very considerable number of cases of syphilis innocently acquired.

The subject of hereditary syphilis, or the transmission of the disease to the offspring by either or both parents is a very large field of study and need not be entered upon here, as the non-venereal origin of syphilis in the vast army of these innocent victims in years past cannot be called into question; as a single instance may be mentioned, the records of the Moscow Hospital, where in eleven years there were 2,002 children born with syphilis, of whom 1,425, or 70 per cent., died.[2]

Founier[3] has recently furnished some interesting data in regard to the proportion of cases of innocent syphilis occurring among women, which may be briefly alluded to. The statistics were taken from 887 cases of syphilis in females in his private practice, where notes of the cases were kept; among these it was found that the disease was communicated in a non-sexual manner in 45 cases, or 5.07 of the entire-number, as follows:

In domestic contagion from nurslings, children, wet nurses or nursery maids with syphilis (all the cases occuring in married women or young children)	12
Syphilis transmitted to nurses by children hereditarily syphilitic	8
Cases of hereditary syphilis	7
Cases of midwives infected on the finger in the exercise of their profession	5
Cases of syphilis acquired accidentally in infancy	4
Syphilis communicated by vaccination	2
Cases of syphilis communicated by Eustachian catheterization	2
Case of syphilis communicated by rape	1
Unknown, but non-venereal origin	4
Total cases of non-sexual syphilis,	45

Among the remaining 842 cases there were 220 women known to be married, from whose histories conclusions were drawn, doubtful cases being excluded. Of these 220, 56 were further excluded, as having either contracted syphilis from a lover, or for other reasons, leaving 164, or 20 per cent. of all the women who were infected honestly and innocently in their marriage relations through no fault of their own. Adding this to the 5 per cent. already considered, Fournier concludes that in about 25 per cent. of all cases in females, syphilis is acquired innocently and undeservedly.

The proportion of cases of syphilis in males where the disease is thus acquired is undoubtedly smaller than in females, but it is probably much greater than one would imagine who had not considered the subject. Several years ago I presented data in regard to the cases of extra-genital chancres which had passed under my observation, before the New York State Medical Society, and the number of cases then reported, namely, 27, has since been swelled to 58. Now, of these 58 cases, no less than 30 were in males, to 28 in females. If the records of extra genital chancres in males occurring in literature are carefully studied it will be found that the number is really very large where the disease has been acquired in a perfectly innocent manner. As a single illustration of the infection of males in this manner, it may be mentioned that in several of the epidemics of syphilis from vaccination, lactation, breast drawing, and the like, it has been repeatedly recorded that several of the women who became infected communicated the disease innocently to their husbands, by means of a chancre of the penis.

The modes and methods by means of which syphilis has been communicated innocently are almost beyond the comprehension of one who has not given thought or research to the subject, and the instances are multiplying in recent literature in a most remarkable manner; showing that, so far from there being less danger than in more ignorant times, the actual instances are increasing as the advance of civilization furnishes new opportunities of immediate or mediate contact and inoculation.

Time will not suffice to enter at all fully into the subject before us, much less to give details of many illustrative cases, but I will endeavor to indicate the lines or directions in which, from past experience, infection may be most commonly expected. Three main groups or varieties of cases of non-venereal infection of syphilis may very readily be made out, according as the inoculation takes place:

1. Among those having common relations, and through the bonds of common interest in domestic and industrial life; to this class the term *syphilis economica* has been given.

2. Among infants and those having to do with their care and nourishment, or *syphilis brephotropica*, and;

3. In connection with the various forms of body-service, medical and surgical, or of like nature—*syphilis technica*. In each of these groups we will find a large number of subdivisions, amounting to over one hundred, representing different modes of communicating the disease which have thus far been found recorded in literature. These divisions may now be considered a little more in detail.

1. *Syphilis Economica.*—Here we have the instances of the spread of syphilis in the family by the common and necessary relations of life, and in the extension of the family relation to the various groups of industrial pursuits; and further,

[1] The limits of this Address permit of but a short synopsis of the matter which has been prepared on this subject, and only the briefest outline of the data can be given

[2] Quoted by Sturgis. Appendix to Diday on Infantile Syphilis. New York, 1863, p. 265.

[3] Founier. Annales de Dermat. et de Syph. Tome viii, No. 12. 1878. New series, p. 757.

the communication of syphilis from one individual to another in the different conditions of individual life. Time forbids more than a mention of the ultimate data belonging to these main groups, most of which have been corroborated by a number of instances reported by different observers. Under implements and vessels we find spoons, knives, forks, cups, glasses and jugs. Tobacco pipes have been the very frequent means of transmitting the disease, and it has also been conveyed by means of cigars, both when passed from one smoker to another, and also when fresh from the manufacturer. Torches passed from mouth to mouth have also been the means of conveying syphilis. Wearing apparel, such as shirts, drawers, pantaloons, bathing-suits, also hankerchiefs, gloves and masks, have all served to convey syphilis; as also lint, plaster; likewise bedding and toilet articles, such as sheets, pillows, towels and sponges, together with combs, syringes and tooth brushes. It is a little remarkable that privy seats and public urinals, which are popularly supposed to be a fruitful source of infection, are found very rarely referred to in a serious manner, and really not a single well authenticated case has been met with recorded in literature, even after a most diligent search during the past three years; a rather striking illustration of the fallacy of popular impressions or beliefs. As more curious methods of conveying the syphilitic poison may be mentioned an opera glass, and a cane.

The next group, relating to industrial transmission of syphilis, includes some most interesting data. Here we find quite a large class of cases, made up of a number of trades or occupations, where the poison is conveyed through the mouth, by the use of necessary implements of the calling. Thus, the well known glass-blowers' syphilis has in times past been conveyed to a very considerable number of persons through the common use of the pipe employed; a total number of at least 162 cases have been found reported, there being repeatedly small epidemics of syphilis from this cause. At one time, when from twelve to fifteen men were thus infected in one factory, there were also five or six of their wives who received the disease again innocently from them, besides many children. Cases are reported where assayers and goldsmiths have been infected from blowpipes used in common, also an instance where the whole family of a weaver received syphilis from a pipe used to sprinkle the cloth, it being passed from mouth to mouth. Musicians have acquired the disease through the mouth-piece of their instruments, and a car-conductor by means of a whistle borrowed from a syphilitic friend. A curious method of the transmission of syphilis is found in an instance where three furriers acquired chancre in the lip by means of the thread which was drawn through the lips and bitten off; the thread abraded the lips and at the same time conveyed the poison. A case is reported where a maker of artificial flowers was infected through her handiwork, and an instance where tack-nails passed from the mouth of one upholsterer with mucous patches to another conveyed the poison to abrasions caused by the nails.

A number of cases are on record where pens, pencils and paper-cutters put in the mouth have carried the poison of syphilis, and one where a piece of lip-glue used after a syphilitic was the means of transferring the poison. A single case, not over-carefully recorded, has been found where syphilitic inoculation was chargeable to a coin put in the mouth, but no instances have been discovered where paper-money conveyed the poison; this is not a little remarkable in view of the frequent habit of wetting the fingers on the lips in handling paper-money.

Laundresses have been reported as acquiring syphilis through their occupation, but the instances are very rare and sometimes dubious. Bundles of cast-off clothing and rags have also been infected thereby, and in one instance it is alleged that the acarus scabiei conveyed the poison. This latter, however, seems extremely improbable, as it is far more likely that the virus was transferred by scratching to the interdigital space where the chancre appeared.

We come next to the group of cases pertaining to individuals in various conditions in life, which relates to the personal transference of the poison by kissing, biting, scratching, pinching, and contact of parts. Kissing affords a most prolific source for the propagation of syphilis, and probably comes next to the venereal act in point of frequency of cases thus acquired. The number of instances of this on record is very large. Biting has also furnished a large number of cases, and a case is on record where the disease was communicated intentionally by a bite, the giver being actuated by personal spite and hatred. Scratching and pinching, and also individual contact in carrying one person by another, have all furnished cases of non-venereal syphilis.

2. *Syphilis Brephotrophica.*—The nutrition of and attendance upon infants has always been a very fruitful source of the non-venereal transmission of syphilis, and literature is full of accounts where not only single cases or groups of individuals have been thus infected, but even where syphilis has by this means become almost epidemic, many being attacked before the real nature of the disease was recognized and its progress arrested. Wet-nurses acquire the disease from infants, who may either be hereditarily syphilitic or who have acquired the disease in some of the many manners to be mentioned later. Infants receive syphilis from wet-nurses, generally through chancres or mucous patches on the breasts, the nurse having acquired the disease either in married life, or from a syphilitic child, or in other manner.

A number of epidemics are on record where from sixteen to twenty-three persons have thus acquired the disease, started by a single syphilitic child, and in the celebrated "Pian de Nerac," occurring in a town in the southeast of France, more than forty women and children were infected, besides a number of husbands and others who concealed their disease.

Hand feeding has frequently been the means of communicating syphilis through the agency of feeding bottles, sugar-teats, cups, spoons, etc., of which many reports are found in literature which need not be here detailed. A single illustration may be given of a case observed by Hutchinson: A woman bore a number of syphilitic children as a result of the disease occurring before marriage. Her husband escaped infection until he acquired a chancre of the tonsil from his habit of starting the feeding-bottle with his mouth, in the night, for his fourth child, who was at that time suffering from a syphilitic mouth. Multitudes of instances are on record where the child has acquired syphilis through feeding implements.

The various offices and relations connected with attendance upon children are also often the means of propagating the disease between them and attendants. Cases are on record where wash water, sponges, syringes, combs, napkins, clothing and other articles have served as the means of conveying the contagion in one or the other direction. The various modes of contact between infants and adults in caring for them have also afforded opportunities for the transmission of syphilis. Thus a case is reported by Waller, where an old woman aged 70 years contracted a chancre on the left cheek and one on the left neck, at points where she was accustomed to hold a syphilitic infant in quieting it to sleep, and a number of instances are on record where a chancre has occurred on the forearm from contact with a diseased infant in carrying. Scratches and tooth wounds inflicted by syphilitic infants have repeatedly given rise to chancres, while a large number of cases are to be found where infants have received an extra genital chancre from the kissing and fondling of syphilitic adults.

3. *Syphilis Technica.*—The third main class of cases of the non-venereal transmission of syphilis relates to the acquiring the disease in connection with the various forms of body service, medical and surgical, or in others of like nature, as by nurses and attendants. Here we find three very clearly distinguishable groups of instances: 1. Where the operator is the victim; 2, where the operator is the syphilifee; and 3, where the operator is the medium.

Syphilis has been acquired by physicians and others in the pursuit of their profession in almost numberless instances, and often in a most unexpected manner. Surgeons have received the poison through wounds during operations, and anatomists during dissections. It is also sometimes acquired in manipulative procedures in spite of the utmost precaution. Jullien[4] relates a case where an eminent specialist had a slight bleeding lesion on the finger and was called upon to examine a chancre upon the upper surface of the glans penis. He held the wounded finger carefully aloof from the sore, but during the examination he found that there was a second chancre of the scrotum which had just come in contact with the abrasion which he had striven to protect. Recognizing the danger, he at once washed carefully and cleansed the part thoroughly, but all in vain, as a chancre formed on the wounded part and the syphilis ran its course.

Accoucheurs and midwives furnish by far the largest number of cases of infection of this class, and literature is full of accounts of the same; personally I have seen five or six cases of digital chancre in physicians which had this origin, one of whom infected his wife. Dentists also occasionally acquire chancre of the finger from infection from mucous patches in the mouths of those on whom they are operating.

Chancres have also been produced upon the eyelids, nostrils, and lips of physicians and attendants by conveying the virus on the fingers to the parts infected, and instances are on record where the patient, while coughing, has projected the poison in the physician's face and a chancre of the eyelid or elsewhere has resulted. On one occasion a physician acquired a chancre of the tonsil from practicing artificial respiration with the mouth on a syphilitic child. Many instances may be found where individuals have become infected in the practice of breast drawing with the mouth, and also by sucking recent wounds.

The next class of cases in this group refers to those in which the operator serves as the syphilifer, and communicates his own disease to others; of this variety there are large numbers of instances on record. We have already noticed that accoucheurs and midwives often contract syphilis in their calling, and numerous instances are on record where they have been the means of spreading the disease to others, and even in large numbers. The celebrated epidemic at St. Euphennie, in France, was of this nature. A midwife acquired a chancre of the right index finger, followed by a full attack of constitutional syphilis. She still practiced her calling for four months, and communicated syphilis to more than fifty women, and through them at least thirty others were infected. In another epidemic in France over 100 were infected with syphilis, and very recently Klein[5] reported an epidemic in England where thirty married women, nine husbands, and two

[4] Jullien. Traité pratique des Mal. Vénér, 2d edit., Paris, 1886, p. 537.
[5] Klein: Brit. Med. Journal, January 20, 1883.

infants contracted syphilis, directly or indirectly, from a diseased midwife.

Another very fruitful source for the propagation of non-venereal syphilis has been found in the operation of breast-drawing by the mouth, which has been mentioned as sometimes giving rise to syphilis in the operator. This practice is less common in this country and among the more highly civilized people than among the peasantry of European countries, where it has sometimes given rise to epidemics of syphilis of considerable size. As early as 1654 an event of this nature was recorded, where a professional breast-drawer infected many nursing women with chancre of the breast, and these in turn infected their nurslings, who communicated the disease to many others. An epidemic of this kind is reported by Leloir[6] as occurring as late as 1880, where a woman acquired a chancre of the lip, and she infected four women, who in turn gave the disease to three nursing infants, one of whom, as also one of the women, died of the disease; one of the infants infected its father through the nursing-bottle and another infant gave the disease to its wet-nurse, who again transmitted it to her own infant. Many more most interesting illustrations could be given but for want of space.

A rather curious mode of propagating syphilis innocently is found in the practice of removing particles from the eye by means of the tip of the tongue. In two small villages in Russia, Tepljaschin[7] found, among a population of 532 persons, no less than 68 individuals, 23 males and 45 females, affected with syphilis, about one-quarter of them being under 10 years of age. One-half of the entire number had been infected directly by a female quack who had followed the industry of removing foreign bodies from the eye, and treating trachoma, with her tongue. The woman became infected in her calling, and pursued it while diseased, with the results mentioned. A number of single instances of the same method of infection have been recorded, two of which occurred in this country.[8]

Wound sucking, which has been mentioned as giving syphilis to the operator, has also been the occasion of communicating the disease to the person operated upon.

Tattooing has been reported as the means of conveying syphilis by a number of observers, and a total of no less than 67 recorded cases has been found; as is well known, the poison is conveyed from mucous patches on the operator's lips, by means of saliva used to moisten the needles or the pigment during the operation.

The last group of these cases of the non-venereal communication of syphilis relates *the operator acting as a medium*, conveying the poison from one individual to another. In illustration of this, a large amount of material could be presented, but space permits of but brief mention of the principal facts.

Vaccination, as is well known, has on repeated occasions given opportunity for the transmission of syphilis, and need not be dwelt upon here. Hundreds of cases of this description are found in literature, and as an example may be mentioned the well-known epidemic at Rivalle, Italy, where 80 cases were reported, of whom 7 died.

Ritual circumcision has also occasionally been the means of syphilitic inoculation, the first reported cases occurring in 1805, since which time a considerable number of observers have reported instances of the same, and on one occasion—referred to by Jaffe[9]—thirty boys were infected by one operator in Vienna.

Transplantation of teeth—an old practice recently somewhat revived—has been the means of conveying syphilis, and skin-grafting has been followed with like result.

The operation of wet-cupping has repeatedly given rise to syphilitic contagion, the oldest account of this being in the case of the celebrated "Maladie de Brunn," in Moravia, in 1578. In this village no less than 80 persons were infected in three months by this means, in addition to about a hundred in the surrounding country. In Finland repeated epidemics have occurred from this cause, in one instance nearly two hundred persons being infected.

Cases have been reported where minor surgical operations, as opening abscesses, scarifying a hydrocele, the use of serres-fines after circumcision, etc., have given rise to chancres with syphilitic inoculation in the site of the wound, and injuries made by dental instruments have in like manner produced syphilitic infection. Razor wounds are also sometimes the site of syphilitic inoculation, possibly produced during shaving, possibly afterwards from other sources.

Eustachian catheterization has on repeated occasions been the means of conveying the syphilitic poison, no less than twenty-five persons reporting cases where this had occurred; of these cases about sixty were traced to the practice of a certain ear specialist in Paris, and some cases of the same nature have also been reported as occurring in this country. Surgical sounds and speculæ are also accredited with having produced like results.

From this very hasty and by no means complete sketch of the recorded methods and instances of the communication of syphilis in the various walks and occupations of life, it is readily seen that the disease may and does occupy an important position among those which can at any time affect the least suspecting, and that it is by no means always a venereal affection. It has been

6 Leloir: Leçons sur la Syphilis, Paris, 1886. P. 54.
7 Tepljasched: Cited in Vertelj. f. Derm. u. Syph., 1887, p. 1138.
8 Cited by de Beck. Hard Chancres of the Eyelid and Conj. Cincinnati, 1888. P. 48.
9 Jaffe: Die Rituelle Circumcision, etc. Leipzig, 1886.

found to attack the young and the old, quite irrespective of sex and condition, and in all the instances alluded to quite independent of any venereal act or possibility. As each new case or series of cases comes to light, it becomes more and more probable that the number of instances in which syphilitic infection has thus innocently occurred is much greater than is commonly imagined. With a poison so virulent, and capable of being transported and introduced in so many different ways, and, as far as is known, endowed with the possibility of being preserved for an indefinite period, the only wonder is that cases of the non-venereal communication of syphilis are not even more frequent than they are now known to be.

The explanation is found in the nature of the virus, which requires a broken surface of skin or mucous membrane for its admission, and the application of the poison in sufficient quantity; when the conditions for its entrance are all present, inoculation rarely fails to take place on any and every portion of the body.

The reason why syphilis is so preëminently a venereal disease is found in the nature of the venereal act, the tender and delicate structure of the epithelial covering of the parts involved, and the frequent injury, together with the long period of comparative health during which the poison held in the system is capable of infecting others. When similar conditions are at all fulfilled in reference to other portions of the body and under similar circumstances, as in kissing, biting, and other modes of exposure, the contagion takes place equally readily and quite as certainly. Moreover, certain other diseases, as scabies, and the vegetable parasitic affections, are not infrequently communicated in sexual congress, and if this was had during the contagious period of such diseases as small-pox, scarlatina, and diphtheria, these would also be acquired, but in none of these cases would the term "venereal disease" be applied.

The thought here presented is that there is nothing in syphilis which makes it wholly, or necessarily, a venereal disease, nor which warrants the stigma which almost invariably attaches itself to the individual affected therewith. While the large majority of cases are undoubtedly acquired through venereal acts, there are also many cases, and we have seen that Fournier puts it at 25 per cent. in women, in whom the disease is innocently acquired. In some studies recently made I have collected the figures relating to about 4,000 distinct cases of extra-genital chancre in different locations, reported by various observers, a large share of which were non-venereal, and in a list of about one hundred epidemics of non-venereal syphilis which I have also tabulated, upwards of 3,000 victims were mentioned, in addition to indefinite statements where large numbers were alluded to. All this is quite exclusive of the thousands of cases indefinitely referred to in literature, and the many scattered instances of innocent infection, where no record is made of the site of the chancre. Moreover, in all the accounts of syphilis where it has appeared, and even still exists endemically in many localities, as in the Radezyge of Norway, Sibbens of Scotland, Scherlievo of Dalmatia, and the syphiloid diseases of many countries, constant reference is made to its transference from one person to another by eating and drinking utensils, pipes, also by nursing, etc.

We come now to the most important part of the subject, namely, the prophylaxis of the disease. If, as we have seen, syphilis attacks the innocent in such a relatively considerable proportion of instances, and if every one who acquires the disease through venereal means becomes a focus from which syphilis may spread not only to the guilty but also to the most innocent and unsuspecting, it becomes the highest duty of all to curtail the amount of the disease present, and the ravages it may make, in every possible manner.

From what has preceded it may be readily understood, therefore, that syphilis is a disease which presents no little danger to the public health and to that of every individual. While undoubtedly an exaggerated idea of the perils connected with it could easily be obtained from the material presented in the preceding pages, it is impossible to shut the eyes to the fact that a measure of real danger exists, as is evidenced by the thousands of cases which have been in some manner referred to, where the disease has been acquired in a perfectly innocent manner. No amount of reasoning or argument can do away with the facts which have been quoted on the highest medical authorities, and the records of cases where the disease has been communicated innocently, not only in the daily intercourse and daily occupations of life, but also in the most varied relations; in the care of the sick and of children, in industrial pursuits, and in professional callings.

Syphilis is now one of the principal diseases which affect the human race, and undoubtedly is on the increase, owing to the utter want of all sanitary control over it in the larger part of the world. There are no data accessible to show its relative prevalence in different sections, except those relating to the armies of various nations; in many or most instances, however, even these returns are not available, inasmuch as they relate to "venereal diseases," and not to syphilis as a distinct malady.

In this country, I learn from the Surgeon-General's Office that there is no reliable information in regard to the prevalence of syphilis in the United States, there being not even any data furnished from our army. According to Sturgis,[10] however, in the Army of the Department of the East, in

[10] Sturgis. Relations of Syphilis to the Public Health. Trans. Am. Med. Ass'n, 1877.

the five years from 1870 to 1874, there were 1,488 cases of syphilis, or 4.22 cases per 100 men; in the Mercantile Marine of the United States, during 1872 and 1873, there were 3,779 cases of syphilis, or 15.33 per cent. of all patients treated. In the city of New York no less than 16.19 per cent. of all cases of sickness in the Mercantile Marine service was syphilitic. From data taken from a number of dispensaries and hospitals in New York City, during the year 1873, Dr. Sturgis estimates that the number of persons treated for syphilis during that year, in this city, cannot be far from 50,000.

Some idea of the frequence of syphilis throughout the country may be obtained from the statistics collected by the American Dermatological Association, from different cities in the United States, during the past ten years. It is here found that fully one-tenth of all cases reported by members of the Association were the different lesions of the skin caused by syphilis, it coming next to eczema in frequency. In some respects this presents, perhaps, one of the best means from which to form a judgment in regard to the comparative frequency of this malady, for as syphilis rarely fails to manifest itself on the skin at some period during its course, cases of this disease are more likely to be observed and studied in dematological practice than in any other department of medicine. It is understood that the data referred to were collected from public and private dermatological practice, and not from venereal clinics.

It will be noticed that in our discussion of the subject very little reference has been made to syphilis as a venereal disease. From reasons which have abundantly appeared in the preceding pages it will be seen that syphilis is as a disease worthy of the utmost study, and from what is known of its various manifestations in the different organs of the body it stands second to none in pathological importance. The fact that in so large a share of cases syphilis happens to be communicated through sexual contact, and in so great a proportion of these it is from impure venereal relations, by no means warrants its relegation to a class of affections the mention of which is tabooed in good society.

While syphilis is a "venereal disease" in a certain sense, its prophylaxis by no means relates entirely to the restriction of venereal diseases, but must be placed upon the broader ground of the protection of the public health, and that of individuals, from a malady which affects the innocent and guilty alike, and which may come both when its dangers are anticipated and guarded against, and when they are least suspected.

In the matter of protection against syphilis, therefore, the subject of prostitution becomes a wholly secondary consideration, and the question is not one of "regulating prostitution," or of inspecting, licensing, or legalizing the "social evil," or of protecting those engaged in it, but relates to the prevention of the unnecessary extension of a disease which certainly does produce a vast amount of sickness, misery and death.

That the spread of syphilis can be checked is self-evident, as has been conclusively proven by the fact that the large and small epidemics which have been mentioned have all been arrested when the cause has been recognized and sufficient measures have been introduced to prevent the further transference of the poison from one person to another. It is also abundantly shown in those instances where foreign governments have enforced strigent measures looking in this direction. We know certainly that the virus does not develop *de novo*, but that it is always communicated from one individual to another; we know, also, that within a certain period of time the disease ceases to be contagious or communicable, in each individual, so that if no new infection is introduced into a community, and those within it are guarded against communicating the disease until the contagion period has passed, the malady will cease to exist.

Such precautions are exercised, both by the public and by individuals, against other contagious diseases, small-pox, scarlatina, diphtheria, yellow fever, etc., and it is no more than proper that syphilis should be placed in the same category, and protection should be afforded against it, for it counts its victims by thousands, where other diseases count hundreds. The deaths ultimately caused by syphilis are now more than those from small-pox, while the injury to health, and the interference with life-work is much greater in the former than in the latter.

In regard to the means of prophylaxis against syphilis, these relate to the individual and to the public.

Individual prophylaxis will result from a more widespread knowledge on the part of the profession and the laity of the manifestations of syphilis, its dangers and the modes in which it may be communicated. In the history of all the epidemics of this disease, large and small, it is constantly stated that the true nature of the difficulty was not recognized, or that the dangers of infection were not known or appreciated even, until numbers were affected. As our knowledge of syphilis widens, and as the synthetic history of the disease is formed, so much less will be the danger of its communication by innocent means.

A glance at the clinical history of *syphilis insontium* as sketched in the preceding pages shows this very conclusively. For instance, the dangers of its communication by vaccination were never thought of until a considerable number of cases had been reported, and undoubtedly multitudes of others had occurred which were never known to the public; the inoculation by means of Eustachian catheterization was not suspected until many

cases had happened in the practice of a certain physician in Paris, in such a manner that the facts were indisputable; ritual circumcision had been practiced for centuries before it was demonstrated that syphilis could be communicated in the operation; and many other illustrations could be given.

Now, however, that these dangers are known and more or less widely recognized, we no longer have such events to record as are found in earlier years, and infection by lactation and other known methods is yearly becoming less frequent; in most countries such general outbreaks of syphilis as the Maladies de Brun, de St. Euphémie, de Chavanne-Lure, the Pian de Nerac, and the many other minor epidemics of the disease, are now well-nigh impossible.

But, on the other hand, it is not equally true that the innocent acquiring of syphilis is really becoming less frequent of late years, for with increased facilities of intercourse the opportunities for its propagation seem to be multiplied, and the actual number of instances of *syphilis insontium* seem to occur in larger proportion than formerly, as may be judged from the abundant records of such cases in current literature. Of course a certain measure of this apparent increase must be ascribed to the more accurate methods of recording in modern times, and the great facility of publication of the same. The present writer has personally recorded some sixty cases of extra-genital chancre, in addition to dozens, or rather hundreds, of cases of hereditary and marital syphilis innocently acquired.

The basis, therefore, upon which personal safety from syphilis must rest, has yet to be reached, for while the disease is allowed to spread unhindered by venereal contact, so long will cases of innocent syphilis continue to abound. This is evidenced by innumerable cases on record where the disease has been acquired both by necessary and unnecessary contact with those thus diseased. A single illustration may be mentioned, where a syphilitic man infected his wife, she then infected a woman who drew the breast, and through this latter woman ten others became infected with syphilis, several of whom died from the disease. How much further the malady spread was not recorded, but it is unlikely that it ended there.

Literature abounds in references to the medico-legal aspect of venereal diseases, and of syphilis in particular, and even a brief abstract of the subject would occupy much more space than can be given, while a transcription of the laws and enactments bearing thereon in other countries might occupy volumes. It is, indeed, a most difficult subject to handle, and one which has occupied the attention of many physicians and jurists, especially in France, Belgium and Germany, and it is in those countries that most efforts have been made by the Governments to stay the progress of the disease.

In Paris, as is known, there is a certain police inspection of public women, and statistics show[11] that from 1877 to 1881 between 800 and 1,200 women were each year sent to the prison hospital of St. Lazare with syphilis. The number of individuals who might be infected from these syphilitics can hardly be computed. In other cities in Europe there is also exercised a control over public characters infected with syphilis, and a varying amount of protection from the disease is thus afforded.

In England a reaction took place, as is well known, against the "Contagious Diseases Acts," and they were repealed some ten years ago, and no effort is now made there to control the development of syphilis.

In this country, as far as is known, there are no sanitary safeguards against the spread of syphilis, and there are very few hospital advantages for those thus affected, while in most of the cities of Europe there are large accommodations for this class of patients, amounting in Paris to between 1,000 and 2,000 beds. New York has but a relatively small service at Charity Hospital, while the vast majority of syphilitic patients are treated at the dispensaries, and are free to go about spreading the disease, often with lesions of a most dangerously infective character. It would be difficult to convey an idea of the carelessness and indifference of some of these patients when informed of the dangers attending their disease, and many, indeed, the far larger share of them, disappear from treatment long before they have ceased to be dangerous to others.

The republican ideas of this country would probably never endorse or submit to such sanitary police inspection and restraint as is exercised in certain European cities, but the question arises if there is not some way in which the end can be reached of arresting the spread of this dangerous disease? Can there be no safeguards thrown out which shall prevent its extension here as in certain countries in Europe, notably Russia, where whole communities have been syphilized, and Portugal, where the disease is almost universal?

The first step toward this, we believe, will be found in placing syphilis among other contagious diseases which come under the jurisdiction of the health officers, so that legitimate means can be devised and executed to check its spread, as in the case of other contagious diseases mentioned. The late Marion Sims[13] alluded to this subject in his address as President of the American Medical Association some years ago, using these words: "There can be no difference of opinion among us regarding the two following propositions: First, we want a system of sanitary inspection and control which

[11] Parent-Duchatelet. De la Prostit. dans la Ville de Paris, 1857, vol. ii, p. 395.
[12] Vibert. Noveau Dict. de Méd. et de Chir. prat., vol. xxxiv, 1883, p. 916.
[13] Sims. Transactions Amer. Med. Assoc., 1876.

will enable us to prevent the importation of syphilis from abroad; and second, we want a system of sanitary inspection and control which will enable us to take charge of the subjects of syphilis at home, and prevent them from spreading it through the community."

The profession is undoubtedly unanimous in regard to the desirability of having such a restraining influence upon syphilis as is indicated in the quotation given, and the only question which arises is as to the best method of carryiug the same into effect.

If syphilis were first recognized as one of the great contagious diseases against which it is the duty of the Government to protect the community, the details of operation would probably follow in time, and as the public became aware of the dangers from the disease and the benefits accruing from its restriction, there would be no difficulty in securing proper laws relating to the subject.

It would be out of place here to present any detailed plan of operation, for the subject is of such vast magnitude and importance that it could not be compassed within the limits of this address, even if the writer were possessed of sufficient knowledge and judgment to formulate such a scheme. The suggestion, however, is most earnestly put forward that the time has certainly arrived when the evils resulting from syphilis should be fully recognized and the proper measures taken for its restriction. No longer looked upon as a purely venereal disease, it should be placed under the control of the proper health authorities, and it should be regarded quite as criminal to transmit syphilis knowingly as it is to communicate small-pox, scarlatina or diphtheria. It would then become the public duty of each and every one to guard against the malady, and its spread would be proportionately restricted. The hotel proprietor who knowingly allows one with small-pox to infect others, or who should not exercise due precautions after such a patient had occupied a bed or room, would receive punishment; and I take it that the keeper of a brothel would be subject to like punishment in regard to the careless spread of small-pox, scarlatina or diphtheria. If, now, syphilis were included with these maladies, something would be accomplished toward checking the extension of the disease. Such a person would then see that all the inmates of the house were free from syphilis and, again, would be very careful that no one entering the house should introduce the disease,

That a person may be held liable for communicating syphilis is abundantly shown by the many cases occurring in the literature of foreign countries. The works of Tardieu,[14] Fournier,[15] and others, are full of accounts of legal actions taken and fines and imprisonment inflicted for the wilful or careless transmission of syphilis, and in some instances those actions were against physicians who had exercised precautions against the same.

How far the matter can be carried in regard to the restraint of syphilitics from exposing others cannot now be stated or even judged. Much enlightenment of the community is yet necessary in regard to the subject, and much thought will be requisite to determine exactly the best methods of controlling the slow but steady extension of the disease which is now taking place. These matters can safely be left for future consideration, after the first step has been taken in regard to placing syphilis among the other contagious diseases which are dangerous to the life and health of the Nation and of individuals. When syphilis is less frequent as a *venereal disease*, the cases of *non-venereal* or innocent syphilis will become proportionately rare.

[14] Tardieu. Étude Médico-legale, etc. Paris, 1879.
[15] Fournier. Nourrices et Nourissons Syph. Paris, 1878.

EXPERT TESTIMONY AND MEDICAL EXPERTS.

Read before the Section on Medical Jurisprudence at the Thirty-ninth Annual Meeting of the American Medical Association, at Cincinnati, May 9, 1888.

BY ORPHEUS EVERTS, M.D.,
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At the Hertford assizes (1699), in the trial of a man accused of murder, the prosecution—as stated by Mr. Justice Stephen, in his learned history of the criminal law of England—"collected a body of doctors to substantiate the proposition propounded by the crown." This case, says the historian, "supplies nearly the earliest instance of a trial depending largely upon the evidence of experts." It is further said, however, by the learned author—and the fact is significant if well considered—that "the defendant contradicted the evidence of the experts in a way that still shows any one who reads the case, that he was fighting with a perfectly idle superstition."

It is a fact conceded by English law-writers, and indicated by the asperity of medical writers towards them, that English judges have never held medical experts, especially in cases of insanity, in high estimation; while in this country the fact is patent to all interested observers, that the testimony of medical experts exercises but little influence in determining verdicts, when not in harmony with popular sentiments, or notions, respecting the merits of any given case.

In view of such facts, may it not be well to consider, briefly, the following questions, namely: What is "Expert Testimony?" What are its essential elements of value? Who are medical experts?

Expert testimony differs from ordinary, or non-professional, testimony in this respect, viz: Ordinary testimony consists of statements of facts as observed by the witness stating them,

and opinions based upon such facts, exclusively, the facts having been first fully stated. Expert testimony consists of opinions, based upon facts, as observed by the witness, or presented for his consideration hypothetically—having been observed by others—that he, by reason of peculiar knowledge, is, alone, supposed to be capable of interpreting.

This definition of expert testimony being accepted, it should not be difficult to determine the elements of value pertaining thereto. They are: *First.* Scientific principles generalized from facts, applicable and equal, to the solution of the problem under consideration; and *Second.* Capability on the part of the professed expert to make use of such principles in the solution of the problem given without bias or prevarication.

That scientific principles, applicable, and adequate, to the solution of the problem given, are essential to value, in the constitution of expert testimony, may be inferred from the fact, that without a knowledge of such principles, the testimony of one witness, of equal intelligence, and opportunities of knowing, would be equal in value to that of another. It is, also, apparent that such principles, to be applicable, and adequate, must bear a definite relation to the facts presented for interpretation, and present features of consistency, and accuracy, that admit of no alternative construction. Were it not so: if, for example, the principles of the science of numbers were not definitely related to the facts of accounting—or not so consistent and accurate as to justify perfect confidence in the prediction that two and two, if added, will make four, it would require no argument to convince us that the testimony of an "expert" accountant would be of no especial value, the data of his calculations being unworthy of trust. The same might be said of the expert surveyor, engineer, or astronomer—the value of whose interpretations of facts is derived from the infallible accuracy of the principles of the science of numbers. So, too, with the chemist (the value of his testimony as an expert depending, primarily, upon the accuracy of the principles of his science), if the relation of chemical phenomena to conditions of matter were not definite and uniform—given phenomena being inevitably sequential to given conditions of matter—the expert testimony of the chemist would be comparatively, if not entirely, worthless. Nor is argument needed to convince us that the testimony of the most capable expert, informed by principles of the most accurate science, might be vitiated, or invalidated, by dishonesty.

What, then, is the real value of medical expert testimony? And who should be considered as medical experts? Doctors of medicine are called upon to testify as experts in a range of cases involving questions of malpractice in medicine proper, surgery and obstetrics; and in cases of suspected crime in which questions of cause of sudden, or unhistoric death arise; and in cases of still greater difficulty and importance, in which questions of mental conditions affecting the rights and privileges of citizens have to be adjudicated. Does that aggregation of knowledge known as "medicine" furnish the necessary principles for their qualifications as experts in all such cases? Are all persons engaged in the practice of medicine, and popularly recognized as "doctors," informed by such principles as do pertain to the so-called "medical sciences." These questions become especially pertinent in view of the fact that there is no recognized standard of educational attainment pre-requisite to either the title or privileges of a doctor of medicine in this country—and the common law admits them all to testify as experts—subject only to the test of cross-examination, as to qualifications, by attorneys who may, or may not, be capable of exposing false pretensions.

When we consider, seriously, the natural capabilities, and acquired knowledges, of a large proportion of the multitude of men and women engaged in the practice of medicine in this country, and the questionable character of much that is taught by the numerous "schools," or sects, of medicine, as science, these questions assume still greater importance; and the presumption of law that all are experts becomes preposterous. Even after eliminating from consideration all persons engaged in the practice of medicine, who are not graduates of reputable, regular, medical schools, the presumption would still be too violent for entertainment.

What, as a matter of fact, does such a presumption imply? Nothing less than an affirmation that the sciences constituting medicine, as taught in our schools, are informed by principles that are definite, comprehensive, and trustworthy beyond dissention; and that every one certified proficient in medicine, by such schools, is competent to make intelligent use of them in the formation of opinions as medical experts, on all subjects.

But to get at the grain that may be in this chaff, let it be admitted that the instruction given in our schools is adequate to qualify medical witnesses to determine, as experts, whether or not an infant found dead was still-born; whether or not certain wounds, seen or described, were necessarily fatal. Whether or not certain deformities following injuries were the results of malpractice. Whether or not, as indicated by symptoms, and post-mortem appearances, and chemical and microscopical examinations, in any given instance, death was effected by poison, etc.; still, the more important qualification of the medical expert to determine questions of mental manifestations, and human actions, whether or not influenced by pathological conditions of brains, or other organs, remains to be accounted for. What has medicine in its widest range of

instruction to offer on this subject? After all, how little! The most thorough-going anatomist is no wiser, respecting the genesis of mind, or the relation of mental phenomena to material conditions, because of his dissections. The most learned and practical chemist knows no more of such matters, because of his analyses, and syntheses, of inorganic and organized bodies, than does the anatomist. Therepeutics throw no light of principles upon the subject. Surgery is dumb, and obstetrics blind, respecting mental science. Physiology—that wonderful and growing science, that is to be, to all other natural sciences, what Aaron's rod was to the rods of the Egyptian magicians—has it not already furnished us with a new psychology, and is it not adequate to our present necessities? Let us see. If we depend upon science to furnish principles answering to our necessities, what are the requisites? It is requisite that such principles shall be applicable, accurate, and indisputable. Does physiology, as now taught in our schools supply the need?

Admit the fact that physiology has already swallowed up all the metaphysical psychologies, and that brains, with their appendages, the nerves, have come to be recognized as essential organs of mind, by which all mental operations are conducted. That when a man, or any other animal, feels, perceives, remembers, imagines, reasons, wills, or acts, it is because of material capabilities, and his brain and nerves do something. That there is a relation more or less definite, of mental capabilities, and characteristics, to size, form, and quality, of brain structures; and an association of certain mental phenomena with certain areas of brain substance. That modifications of mental capabilities and expressions, constituting all of the many degrees of capability, and peculiarities of expression, known as "idiocy," "imbecility," "mania," "melancholia," and "dementia," may be effected by arrest of cerebral development, and modifications of brain activities, whether effecting constructive or destructive results, and concomitant transmutation of energy—admit all this, as pertaining to present physiological knowledge—still the fact is apparent that we have not been supplied with such scientific principles as would, alone qualify medical experts to testify as such, in the jurisprudence of insanity.

Physiology, as taught in our schools, is indeed, still in doubt respecting the relation of mind to body: whether consciousness is an inherent quality of matter, manifested, as all other qualities are, by motion; or an attribute of a supernatural, indwelling spiritual being, not subject to sensuous observation, but inspiring or instigating, all bodily activities. In doubt, whether mental manifestations are concomitants of brain activities instigated by an immaterial ego, or the inevitable sequentials of ever-changing conditions of brain-substance, influenced by environments.

Nor can physiology tell us, in accordance with any theory, just what the brain or body, or spirit, does when a man feels, thinks, or acts; nor just what instigates his activities, determines his movements, and differentiates his capabilities. So that, even with these doubts of physiology dispelled, and the subject of man's creation and constitution forever withdrawn from the shadows of superstitution, and the overawing presence of the supernatural; and the science of psychology arranged in line with all other natural sciences, in accordance with a monistic theory of the universe—of which men are inseparable particles—we should still be unable to predict, with certainty, the phenomenal sequences of all given conditions of body, or brain, precedent; or to infer, with precision, conditions of body, or brain, by any given mental manifestations, unaided by other than physiological information.

Why then should doctors of medicine be regarded as experts in the jurisprudence of insanity, more than other persons of equal general intelligence? Is it not because of the fact that the official relation of the doctor of medicine to the afflicted, is now, as it ever has been, the most intricate, intimate, and privileged, known, or tolerated, by civilized or savage society; and because his movements as diagnostician, and dispenser of drugs with healing virtues are, to the uninitiated, within that same shadow of superstition that obscures their vision when trying to comprehend the mystery of thought, whether sane or insane? Hence, his greater opportunities of observation and study of the natural history of men and their disorders, and the endless variations of mental phenomena as related to material, observable, facts. Must not any claim of qualification as an expert in the jurisprudence of insanity, therefore, be based upon special, long-continued, intelligent, observation of the insane; and careful, comprehensive, studies of the natural history of insanity—rather than special knowledges derived from medical authorities—however advantageous such knowledges may be to the observer and student? And must not the value of the testimony of experts, so qualified, correspond to the natural capabilities, advantages of education, and experience, and general interest in the subject, of the persons testifying?

In these days, therefore, of specialties in medicine, and the habitual commitment of the insane to hospitals, or asylums, for treatment, or maintenance, at the earliest practicable moment, but few general practitioners of medicine have either the opportunity or disposition to so qualify themselves as experts, in this branch of medical jurisprudence; and but few—to the credit of the profession be it said—voluntarily appear in court pretending to be such.

Of the second essential element of value mentioned, the integrity, and freedom from bias, of the expert witness, but little need be said. Perverted knowledge is more dangerous than conceited ignorance. The natural tendency, of experts, however, is to invalidate their opinions more or less, by the admission of color derived, imperceptibly, it may be, from the interest taken in behalf of the parties employing them. Instigated, also, by professional pride, experts, like detectives, are more zealous in finding what they are supposed to be peculiarly qualified to find, than otherwise; a fact that in this country has been, so far as expert testimony has influenced courts or juries in any way, advantageous to defendants, in cases of criminal prosecution; and of plaintiffs, in cases of contested wills.

These are natural tendencies that experienced experts are capable of overcoming, when recognized; but should not be overlooked in estimating the value of expert testimony.

Of the mercenary and venal expert, nothing need be said. If such there be, they have no proper place in a profession so proverbially unselfish as that of medicine.

Cincinnati Sanitarium, May 4, 1888.

CONDITIONS THAT PRECEDE SERIOUS LESIONS OF THE KIDNEYS.

Read before the Mississippi Valley Medical Society, at St. Louis, Mo., September 26, 1888.

BY C. S. BOND, M.S., M.D.,
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The untiring energy of medical men of this period seems to be expended in a search for the primary causes of disease. At one time we awaited the inevitable result of some fatal malady to observe at the post-mortem its pathology. At a later period we were eagerly watching some distressed patient, slightly affected with disease, with the hope that some intercurrent trouble might destroy him, for the sake of a pathological specimen representing a less severe lesion. To-day we sincerely hope the patient will not die at all, however charming a knowledge might be brought to light by the legacy of his pathology. What we most desire as medical men now, is to avert the more serious lesions by recognizing the first departure from the healthy condition.

After the lungs are largely solidified or filled with purulent cavities it is of little avail to advise a trip to the mountains, or give drugs to bring about renewed health. There is a fearful mortality among such a class of patients; but as we are enabled to recognize the beginning stages, by better means of diagnosis and a more extended knowledge of the disease, we can act more promptly, and either check the malady in its initial stages or, what is better, prevent the patient from having it at all.

What is true of these lung lesions is equally true of serious chronic conditions of the kidneys. Francis Delafield, in his article on chronic parenchymatous nephritis in "Pepper's System of Medicine," speaks thus of the prognosis: "The prognosis of chronic parenchymatous nephritis is not good, but still it is not so bad as that of chronic diffuse nephritis; some of the cases recover and never have any further indications of kidney disease." Of chronic diffuse nephritis he says: "In every case of chronic diffuse nephritis, the natural course of the morbid changes in the kidney tissue is to become more marked and involve more and more of the kidney. . . . The disease is always a very serious one, and terminates regularly in destroying life, but the length of time that will elapse before this fatal termination, and the precise way in which death will take place, are difficult to determine beforehand."

As this is the most frequent form of kidney disease, it will be apparent that the mortality is very great, and if there is hope in the future of doing better work for this death-stricken class of sufferers who annually find premature graves, we must learn to diagnose this disease before the point now reached; before we are able to recognize the conditions by our present methods of diagnosis. When we find a patient suffering from swelling of the extremities and face, muscular twitchings, dyspnœa, neuralgic pains in various parts of the body; a patient who passes albumen, with a diminished quantity of urine; who also passes casts and has a badly disturbed stomach, we are thus led to believe that such an one is beginning, or has begun sometime previous, the career of some serious lesion of the kidney; and our discovery is fraught with but little that can encourage the patient in cases of chronic changes in these organs.

For more than four years past I have been making examinations of urine from patients suspected of having some chronic lesion of the kidneys. The examinations have been conducted with an especial reference to the amount of urea excreted in twenty-four hours by individuals among this class of patients. Not only to cases of these diseases have the examinations extended, but also to other conditions of ill-health and to urine excreted by perfectly healthy individuals so far as I was able to judge. During this time I have made examinations for about eighty patients having the prominent symptoms laid down by the latest and best authorities as those denoting chronic structural changes in the kidneys. For these patients, extending over this space of time, I have a record of nearly 800 examinations, not including the other examinations just referred to relating to other diseases. During this time I have twice called the attention of the Indiana State Medical Society, through papers,[1] to this subject, and have

[1] First paper, entitled "Urea," may be found in Transactions

received encouragement to extend this kind of investigation. I make mention of these observations in regard to urea not because I believe the subject to be an entirely new one, but because I want to call attention to some deductions later on, made from this series of cases, which I believe to be in line with our future knowledge on these subjects.

Many recent authorities have called to our notice the facts that in cases of serious kidney lesions urea is found in the blood in increased quantities, and that this in some way, when very excessive in amount, produces various nervous disturbances, even leading at times to complete coma; yet most of these same authorities have neglected to give us any very definite information concerning the normal quantity of this excrementitious matter which should be thrown off during twenty-four hours, or a knowledge of the amount of decrease in quantity in cases of diseased kidneys. The article by Dr. Delafield, before referred to, makes mention of the deleterious effects of urea when retained in the blood, but in diagnosing the cases he makes no statement concerning the amount of urea excreted in twenty-four hours.

In "Flint's Practice of Medicine" a more absolute statement is found. He says "that the daily quantity of urea is lessened," and in another place states that "it is of importance to estimate the amount of urea excreted daily, for which purpose it is of course necessary to determine the percentage of urea in the total quantity of urine passed in twenty-four hours. The specific gravity of a single specimen of urine is manifestly of no value in forming an idea as to the daily excretion of urea. It is necessary to take into consideration at the same time the quantity of urine voided in the twenty-four hours." While this is of value and corresponds to the latest observations on this subject, still he neglects to call attention to the quantity of urea he deems a lessened quantity, and in what prognostic value he would regard these different conditions; items which are vital in making a proper conclusion. Again, he does not state what should be the *continued daily* excretion of urea, in order that a comparison of these quantities might be made with former records, and with the daily course of the disease as manifested by the symptoms. Bartholow states "that urea is excreted in less than the normal quantity, and varies with the changes in the specific gravity of the urine." Loomis in his "Practice" says: "As the elimination of urea is steadily diminished, it is important to subject the urine to frequent quantitative analyses." This is said in regard to chronic parenchymatous nephritis. In speaking of the waxy kidney he states that "the amount of urea excreted is but little if at all diminished."

of Indiana State Medical Society for 1886, p. 89. Second paper on Urea in Transactions of same Society for 1887, p. 71. Second paper was written on motion of Society.

It will be seen, therefore, that so far as these authors are concerned, they make very indefinite statements in regard to the excretion of urea in these diseases, and they use this knowledge very little in making a diagnosis or prognosis in an individual case. I believe that what is true with regard to these authors is also, in a greater degree, true of the mass of practitioners. The urine is not examined with reference to the amount of urea excreted in twenty-four hours, and a careful record kept of the quantity for certain days during a long interval of time, so that a comparison can be made with the varying symptoms. That urea is retained in the blood of these patients is acknowledged by all who have given this subject a careful study, and that it produces serious nervous disturbances is also admitted, yet not a great deal of consideration has been given these truths in making up the diagnosis of these lesions. In my experience, retained, or diminished quantities of urea, is one of the constant conditions found in cases answering in all other respects to chronic diseases of the kidneys, and I have begun to regard of very little importance the presence or absence of casts and albumen, except as a differential diagnosis between the varieties of these diseased conditions. I should very much prefer to know that a patient passed constantly but 10 grams of urea daily, as a means of diagnosis, than to find that another case passed large or small quantities of albumen and casts, since by the former knowledge I would not only know the class of disease to which this symptom points, but I would also know something of the extent of the mischief then present in these organs, and could therefore be on my guard in regard to conditions pending. The healthy individual weighing 140 lbs., and living on a mixed diet, should pass between 25 and 35 grams of urea in twenty-four hours. Whereas a non-nitrogenous diet for several days might reduce the quantity of excreted urea to 10 or 12 grams in the same interval, or the failure to take food for several hours in sufficient quantity would lessen the amount excreted for the time; but neither of these conditions would be continuous, and if they were so, the other conditions indicating retained urea, as shown by the symptoms, would not be present; therefore a patient who passes from 10 to 15 grams of urea daily, for a long interval of time, and complies with the other conditions of health, can be said to have some structural changes present in the kidneys, or will, at a longer or shorter interval, have these organs diseased, if this quantity of excreted urea remains constant.

This brings me to the subject to which I most desire to call your attention in this paper, and to make it more plain, I have grouped all the cases contained in my record into three classes, all of which agree in that there is a constant diminished quantity of urea excreted in twenty-four hours,

and this quantity has remained below the normal for several weeks, months or even years, producing a class of symptoms which are also common to all three of the classes to a greater or less degree, while no evidence of any other structural changes could be detected by the most careful examination, except those common to this condition.

CLASS I. This class of patients pass a diminished quantity of urea, from 6 to 18 grams in twenty-four hours. Generally the urine is diminished, but may be greatly increased in quantity during this period. They complain of being exhausted upon the least exertion, also have dyspnœa, vertigo, nausea, and sometimes vomiting. Always complain of neuralgic pains in various regions of the body, generally more common in the intercostal nerves. They have twitchings of the various muscles of the body and œdema of the hands, face, and extremities which is more or less marked. Patients pass albumen and casts in large quantities, and nearly all, if not quite all of such on my list have death marked after their names, or are in a condition that soon will bring about that result. This sad ending is reached by a series of explosions which is attributed by the patient to taking cold, but which seems to be the tendency of the disease after it has reached such a degree of destruction to the renal organs and other tissues of the body. This class of patients is such as is described by authors under the head of chronic Bright's disease.

CLASS II.—This class, as the *first*, pass a diminished quantity of urea in the twenty-four hours with more of a fluctuation in the daily quantity, as shown by several examinations at short intervals, and although this tendency is toward the normal quantity, still very few arrive at this point, and fewer remain long in this condition when the record is still further extended. Patients pass but faint traces of albumen occasionally, with a few granular or epithelial casts, but more often neither albumen nor casts are found. This class of patients have neuralgic pains, vertigo, more or less disturbance of the stomach at times, with exhaustion on slight exertion.

Generally after a long time the *second* class fall into the *first*, as shown by examination of urine and symptoms. A few however pass into the *third* group and after a time even into a condition of apparent health. More of this group consult a physician, than those of the *first* class, for the first time, and something can be done for these patients if the disease is recognized at this point.

CLASS III.—This class comprises a number of patients who pass at longer or shorter intervals diminished quantities of urea in the twenty-four hours, the variation being from 10 to 20 grams, but this condition does not remain constant for repeated examinations, the tendency being gradually to approach the normal standard when properly managed. Still some of these patients pass from this to the second, and even to the first class and at last die, and post-mortem reveals chronic interstitial nephritis. This class also complain of general weakness, pain in arms and chest, vertigo and general nervous disturbances. They pass no casts or albumen. They have but very slight, if any, œdema in any part of the body and there is almost always a relation existing between the symptoms and the amount of urea excreted. So much is this the case that knowing one you can predict the other, *i. e.*, if the patient excretes more urea the patient feels better and if, on the other hand, the symptoms are worse the excretion is less.

It will be seen that this division into three classes is arbitrary, and that the classes merge into each other in such a way as to have no natural division, and I shall here cite a few individual cases to make this classification more plain. These cases have been chosen because I believe them to be typical ones representing these classes, and are but few among a number that might have been given in each group of all the cases on record.

Henry M., German, age 40. Came to office in September, 1885, complaining of general weakness, headache, nausea, dizziness, shortness of breath, swelling of lower extremities. These symptoms had been more or less severe for several months. Examination showed slight traces of albumen. No casts. Diminished quantity of urine, and passed only 7.2 grams of urea in twenty-four hours. At this time the patient was laying brick and following his trade most of the time. Was eating fairly well of a mixed diet. Upon saline cathartics and digitalis patient seemed to improve for some months, but suddenly, while at work, again began having some of former symptoms and soon grew worse, and in a few weeks was dead. Post-mortem showed chronic interstitial nephritis.

Mrs. S., age 35. Came to office in October, 1884, complaining of dyspnœa, insomnia, vertigo, nausea, pain in intercostal region and headache. Was doing her own work in house. Was eating moderately of a mixed diet. Passed two pints of urine in twenty-four hours, but this contained but 10 grams of urea. Passed no albumen or casts. Repeated examinations at intervals of three or four days showed quantity of urea excreted to range from 10 to 15 grams in twenty-four hours. This condition lasted for ten or twelve months, when extremities began swelling. The dyspnœa increased, albumen and casts appeared in the urine and patient died with chronic interstitial nephritis, as in first class.

Simon M. Had, in April, 1886, pain on passing water. General weakness for several months previous. Pain in left side almost constantly. Passed two pints of urine in twenty-four hours, containing at first 9.6 grams of urea. Patient

presented no other evidence of disease upon careful examination. Passed no albumen or casts. Ate a mixed diet, and could come to office. Patient gradually improved upon saline cathartics, digitalis, and nitro-glycerine, until quantity of urea excreted equalled 28 grams in twenty-four hours, when all distressing symptoms were gone and has been apparently in good health since.

Miss Alice D., age 27. Came to office in April, 1886. Had been treated for uterine misplacement, persistent anæmia, and general nervousness, for several months previous, but gradually grew worse. Careful examination of uterus showed it to be in normal position and in a perfectly healthy condition. Patient was pale. Had headache almost constantly. Pain in lumbar region and limbs. Was very nervous and was gradually losing flesh. No other evidence of disease could be detected. The urine showed, sp. gr. 1010. Acid. Passed two pints in twenty-four hours, with no albumen or casts. Per cent. of urea $\frac{7}{10}$, or 6.7 grams, in twenty-four hours. At this time patient was eating fairly well of a mixed diet. Upon saline cathartics and nitro-glycerine patient gradually improved, as shown by symptoms and quantity of urea excreted, until November, 1886, when she was discharged apparently well and has so continued since.

Miss. P., age 20. Came to office in April, 1886, complaining of headache, dizziness and nausea. Feeling of general weakness. Pain in intercostal region. Chorea in right leg. Had been treated for these symptoms for several months previous but grew no better. Careful examination showed no other evidence of disease. Patient was eating moderately well of a mixed diet. Urine acid. Passed one and a quarter pints in twenty-four hours. No albumen or casts. Per cent. of urea 1½, or 9 grams in twenty-four hours. Upon cathartics and nitro-glycerine patient gradually improved, until in one month she passed 17.2 grams of urea daily, and chorea and pains ceased, but still continued a feeling of general weakness, and she passed no more urea than the quantity named until November, 1886, when quantity reached 20 grams, where it has since remained, with slight variation, and patient is comfortable, but not well.

Another group of this third class of patients begin with the symptoms belonging in common with this class, and afterwards fall into the *second* and even into the *first* class, and die as befalls this class. These cases are cited, as I said above, in order that the general propositions might be made more clear, as well as to give an idea of the general course of treatment of the individual cases.

All these statements, drawn from a record of a number of cases, would seem to indicate that there are conditions which precede the more serious manifestations of chronic kidney lesions, that by a careful examination of the urine for the daily quantity of urea, together with the symptoms, might be discovered long before the more hopeless symptoms that we now recognize as those of Bright's disease, are manifest. I believe, still further, that in view of these facts it must be admitted that there are changes taking place in the system at large which are in common with the conditions present in the kidneys, that interfere not only with excretion, but with general nutrition, and in some way produce at first irritation and afterwards more or less extensive chronic inflammatory results in various tissues of the body. As still further proof of this proposition it is only necessary to call attention to many inflammations which accompany serious lesions of the kidney, which originate often in the early stages of the diseased condition, and as I said before, I do not believe they are associated as cause and effect. It is a frequently observed fact that retinitis accompanies these diseased kidneys and is generally looked upon as secondary to the more serious kidney lesions, but retinitis has been often discovered in the earliest stages of kidney disease, and has even been pointed out as a forerunner of these conditions. Endocarditis, pericarditis, pleurisy, and other inflammations of serous membranes may also be reckoned as a part of these general disturbances, and a careful examination of the urine will disclose, even before the outbreak of these diseases, an abnormally small quantity of urea excreted by patients answering in all other respects to the conditions laid down above.

The point of departure from the healthy condition in the development of this class of patients is not well defined, but it is safe to say that it is either to be found in the vaso-motor and trophic disturbances due to an accumulation of urea in the blood, or these disturbances cause an interference with the normal excretion, and are then followed by this secondary irritation due to the presence of an abnormally large quantity of urea. It is the purpose of this paper, however, simply to show that at an early stage of these diseases a diminished quantity of urea is excreted in twenty-four hours, and that many of the symptoms at this early period are identical with those found in the well recognized cases of chronic kidney lesions. That this diminished quantity of urea can be made a factor in diagnosis long before albumen and casts occur in the urine, when the patient is going from one doctor to another, being treated for uterine disease, anæmia, dyspepsia, general debility, and nervous exhaustion. That it is the duty of every doctor to make examination of the urine for urea in cases presenting one or more of the prominent symptoms before mentioned in this paper, and to give such treatment as is well known to have the power to eliminate this irritating substance from the blood.

In conclusion, I believe firmly, that if doctors will give careful attention to these examinations

they will be able to recognize a very fatal malady in the infancy of its career, when there is hope of checking it before it reaches that almost hopeless condition now known as Bright's disease, and that you will be surprised many times to find that cases which you, or other doctors, had been treating for other diseases, pass after careful examinations and treatment into the second and third of these classes, and will by proper attention get still better, and after a time entirely recover. On the other hand, you will be equally surprised to find that patients you had been treating for dyspepsia, anæmia, or nervous prostration, will begin to pass albumen and casts, and be horrified at the knowledge that your patient has at last chronic Bright's disease.

THE EDUCATION OF THE DENTIST, YESTERDAY, TO-DAY AND TO-MORROW.

Read at the Joint Meeting of the American Dental Association and the Southern Dental Association, at Louisville, Ky., Aug. 29, 1888.

BY D. R. STUBBLEFIELD, A.M., M.D., D.D.S.,
OF NASHVILLE, TENN.

It does not require a Methuselah to look back to the birthday of Dentistry. She has made such rapid strides forward among the sciences, that, though comparatively young, she demands and receives recognition at the hands of the most erudite. Her ranks are filled by all kinds and nationalities of men, who have all varying degrees of natural fitness. But there was a time when this Cosmopolitan condition did not exist. Then the field was new, and filled almost entirely by uneducated men. There were, however, a few daring souls, who appreciated its importance and who felt an impulsive urging from within of a bias for its special duties and demands. They were the self-elected leaders of a forlorn hope, as it were, and did not expect much but hard work and poor appreciation of their services. But like Gideon's little band, they were filled with that indomitable determination to succeed that almost always wins the battle, tunnels the mountain, or gains the victory of any kind. Conversely to a survival of the fittest, they were the fittest, volunteering themselves to do or die in a chosen life-work.

The point I mean to make, is, that each candidate for the then questionable honor of being a dentist was, by reason of his self-election, generally equipped with a special aptitude for dentistry. There were exceptions to this general rule, doubtless, but they were only sufficient to prove the rule, not invalidate it. The outcome was so uncertain that each applicant for the then questionable honor, determined his fitness by a thorough investigation of his own powers, and then fully consecrated himself to his work. Each filled his own proper niche in life. Each had a single purpose and was devoted to his cause. Each was willing to work in the very face of poor opportunities to learn, and poorer facilities with which to work. It was by dint of effort often repeated, and against failure as constantly recurring that success was at any time to be achieved. General education was rare, not the rule. Professional generosity was not born, and narrow-minded jealousy stood ready to kill the inquisitive learner. And it was not strange that each was so niggard with his hard-earned store, when we remember the daylight was not broad, but only the dawn threw its uncertain beams upon them. Our Pilgrim Fathers constantly carried their arms against the ever possible attacks of the destroyers; so, these, our professional fathers, guarded their small secrets and jealously kept them against the treachery of others, as they understood it. To be sure, it is not our way, but the customs of that day and this differs widely, and the sun of professional generosity had not dispelled the mists and fogs of ignorance that still obscured the landscape. In the light of the present they appear almost contemptible, and would be so, but for the extenuation, found easily in their different surroundings, which puts them within the pale of a generous charity. Let him, who would have been better under the circumstances that enthralled them, cast the first stone. I do not condone the fault, but I demand, a fair and right, considerate, not to say lenient, judgment for the doers.

And yet they need no defender. They did too much, in the very face of confessed disadvantages, to make the foundation upon which we of to-day stand, for us to deny them credit, or refuse to be grateful. The perfection of an invention is certainly very commendable, but while we honor the perfector, we must not lose sight of him who conceived the idea from which it grew. Those honest-hearted ones held firmly to their convictions, and dared to promulgate them with their whole lives. They irresistibly command our respect. The world in its ignorance denied the necessity for their work and refused, except from the direst need, to allow them a chance to prove its value. Against the tide of these and all other opposition they urged the bark of dentistry into the haven of respectable recognition. It was a struggle, in effect, like that of the Colonies for Independence, against Tory doctors within the scientific world, and all the opposition from without combined. We have much for which to thank these foundation builders of the past, and we would be recreant to all professional heredity to refuse it. They developed appliances; we use them. They founded colleges of special learning; we are the learners. They questioned all methods and put infinite pains upon each; we are easily able to select the best for each case. They were

the garnerers; we the feeders that live upon their grain. Thus in all things the planters of yesterday feed the open mouths of to-day.

The dentists of to-day are the legitimate result of their determined adherence to principle. We stand so nearly related to them that we are necessarily the objects of their benefactions. We deserve no special credit for being even better than those of yesterday, for we can easily obtain the benefit of their work without a tithe of their labor. The sun of scientific enlightenment has revealed the fact, now fully recognized and conceded by the scoffers of the past, that dental science is necessary to the world, and the profession itself is just as reputable as any of the so-called "learned ones"—that is, in fact, one of the learned ones. The world admits that dentistry is a branch of the general healing art, without reference to its being or not being a specialty of medicine, and as such is entitled to all consideration. I cheerfully give the meed of praise to the dentist of yesterday, who, as he was in many instances uneducated, suffered from a narrow view, yet who carried within him the sign-manual of the Creator, manifesting itself in a special aptitude for the work. We, of to-day, do not flatter ourselves unduly by claiming that, with like careful selection, and better facilities for preparation, we can show greater advancement. But there is a trouble engrafted on us as a body professional, the consideration of which brings us to consider the dentist of to-morrow, namely, that the painstaking, introspective, self-examination, is not practiced in the selection of dentistry as one's life-work, as it was formerly done. It is too often the case that the idea of great emolument (?) proves the allurement, and the question of natural fitness is not even considered, much less settled. In other words, too many men are dentists (so-called at least) without self-election, in the sense of being naturally fitted for the work. One becomes a dentist because his father was a dentist, and he loses sight of the fact that heredity has stamped him his *mother's* boy; another becomes a dentist because a boy friend, who is unusually well fitted for it, is succeeding, although he may be entirely incomparable to his friend.

Dentistry now on a plane with other professions, must expect to suffer like them from the entrance of ill-advised votaries, enticed by adventitious inducements. It is an irrefutable fact that men are to-day forging ahead in the professional world by dint of main strength, where pride and intelligence are backed by fair cultivation, who would evince the grandest human ability in other vocations. It is a pity that inherent power should be misapplied. This could not always be prevented, but judicious selection, based upon mature consideration of character, should be the highest duty of parents. The pride to be this, that, or the other, developed prematurely in a child, should be most sedulously avoided. Too much care can not be expended to ascertain the trend of the composite inheritance of a child. Pride of station and ancestry should be overcome in the all-important selection of a thoroughly congenial and compatible life-work. The most earnest scrutiny should be kept upon the formative forces bearing upon the child, so that they are not allowed to prove deformative processes, to warp a splendid success into as splendid a failure. The children of any profession are the natural recipients of any hereditary qualification for that profession, but we must not lose sight of the fact that the flow of hereditary is deflected and often changed entirely by the other side of the family. Hence, no invariable rule can be set to govern people who are not invariable. All of Phrenology may not be true, but enough to prove its general truth is found in human faces, built upon substantially the same anatomical bases and with parts that differ but slightly, and yet how different! None can doubt that different men have different qualities of mind as well as different faces, and that, therefore, they are better fitted to pursue some profession than any profession, to advantage. And yet, there is a general intelligence that enables some to follow almost any profession with credit, when faithful application is made. Such men may be thrown out of the channel best suited to them, and, still, against a natural bent, they develop success out of failure. None will dare to deny, however, that they would have done more, gone higher, or reflected greater luster on themselves in that calling that satisfied their whole nature than the work in which they had been perfunctorily engaged. If this is true, then the special work of dentistry offers the best field for some of the diverse minds of the world.

These very ones I commend, out of which to make the dentists of to-morrow. They are Heaven-elected dentists, if they properly qualify themselves to discharge its obligations.

The profession should demand three things to be done, one by them, one by itself and one by the schools. *First*, demand that a broad foundation of primary education should be laid, as preliminary to all other intellectual preparation. I go back of professional training in this and demand the same educational qualifications that the most learned profession ever demands. To prepare for law, they search all fields of educational lore, drink at all fountains of knowledge, and then put on a capstone of law. Just such a course, I claim, is best, if not always possible, for a dental student, and even more important, since the issue of life and death is, at times, in his hands. More is demanded of the studenthood to-day in all branches than ever before, and dental students must expect exactions commensurate with any other. Minds trained primarily and cultivated

persons, added to that trend of character that is the natural qualification, should be considered the *sine qua non* for correctly prepared dental students. Trained minds, that they may bring skilful intelligence to work out the conceptions of our high and progressive science; and cultivated persons, because our intimate personal associations demand that we be agreeable in necessarily painful duties. Such only would rise to the highest conceptions of our future. The beginners are on an average too crude from which to obtain the best results. They deem themselves well qualified to meet all requirements, when they decide to honor our profession with their patronage. The will is essential, but not all-sufficient. The day has come when better methods must prevail. Years ago, it was excusable to commence the study of dentistry without a proper foundation, but I insist that such a course is not up to the requirements of the times. A log cabin or a wigwam might be built upon the level earth, but a Washington Monument, or a Liberty Enlightening the World, must have a deeply laid and a well constructed foundation. Dentistry of to-morrow must over-top dentistry of to-day, and the basis must be deepened and broadened as the top goes upward. To do this the profession must awake to its responsibility and actively demand of our dental schools that they shall be more exacting as to a suitable preliminary education of their matriculates, and that they shall provide the means necessary and demand of their students a broader and more thorough knowledge of the fundamental sciences of medicine and surgery, before graduating them as Doctors of Dental Surgery.

Second, one by itself, and that is to establish a higher, better moral tone. The old idea that what was good enough for my father is good enough for me, must be supplanted by a more progressive, a more enlightened view of our calling, and the essential factors that constitute its higher standard. Such a revolution can not be accomplished in a day. Harvest is always preceded by a preparation and proper seeding, and a long time of patient waiting. But it ought to be done, it must be done, if we intend to rise with the tide of the general progress of the hour. Each dentist must become a radiant center of elevated moral tone, be the circle that surrounds him great or small.

Third, one by the schools, which must assist by a sensible elevation of the standard for entrance, a judicious extension of curriculum, and a more rigid demand for thoroughness before conferring degrees. Cast iron regulations can not avail, because the modifications at any point are not identical or comparable to those at any other point. Ends must be aimed at; means will take care of themselves. Let the sentiment be unanimous and utterances conform to it. The moral backing thus developed will engender courage to begin the revolution. Be assured, it can not be wrought by chance, and indifference will result in forging more indissolubly the fetters that bind us to the traditions of our past. Schools can not do more than reflect the impress of the profession in the aggregate, as seen upon the collected pupils from all sides. Let every dentist constitute himself a committee of one to properly prepare one student. The great rolling river is just what its tributary springs make it, and dentistry will be elevated or depressed by your efforts and mine. It behoves us to rise to the emergency and do our best to discharge the obligation that we assumed in the marriage vows of our high calling. It is unquestionably essential that the schools shall be more thorough, but our duty lies back of their work. We have one responsibility and we must act, we must work, or die out of the way of those who will.

MEDICAL PROGRESS.

EFFECT OF COFFEE ON THE URINE.—DR. DUMONT, of Louvain, has undertaken a series of researches on the effect of coffee drinking on the urine, from which it appears that, though the diurnal quantity of urine is not seriously interfered with, the composition undergoes a very decided change. Dr. Dumont kept the subjects of his researches for some days on ordinary diet, the constituents of which were determined. During part of the time only was coffee added, the quantity being three cups—corresponding to about two ounces of roasted coffee—per diem. By regular and careful analyses of the urine, it was found that during the days when coffee was taken the urea passed was increased by about seventy-five grains. The effect on the urea was produced immediately the coffee was commenced, and as soon as it was omitted the quantity of urea returned to that which it had exhibited previously.—*Lancet*, Sept. 29, 1888.

ARSENIC IN RHEUMATOID ARTHRITIS.—DR. WILLIAM OSLER recommends Fowler's solution in initial doses of five drops three times a day in the treatment of rheumatoid arthritis. This dose is gradually increased to the limit of tolerance and then held there, the effects of the drug being carefully watched.—*Medical Record*, November 24, 1888.

ANTIPYRIN IN LARYNGISMUS STRIDULUS.—MR. MONTAGU PERCIVAL, of Waratah, Tasmania, reports successful results in 24 cases of laryngismus stridulus treated with doses of from 2 to 5 grains of antipyrin every hour. The cases were due to sudden changes of temperature, with damp winds.

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SATURDAY, DECEMBER 22, 1888.

"PENNY WISE, POUND FOOLISH."

We hasten to endorse the Peoria *Transcript's* proposition that the general assembly promptly abolish the State Board of Health. Founded originally for the promotion of the sanitary condition of the people it has lapsed into a mere technicality of medical practice and a mutual protective society for the profession of Illinois. No valid objections could be advanced against the Board of Health being operated in the interest of the medical profession if it were not maintained at the expense of the tax-payers. The cities are governed by sanitary regulations of their own, while in the country districts any justice of the peace is empowered to act in behalf of the protection of public health. The Board of Health seems to be an unnecessary institution and one from which the people derive little if any benefit. As its maintenance is quite expensive it should be altogether abolished in the interest of economy.—*Bloomington* (Ill.) *Eye*.

Were Cicero living at the present day he would not have to go far to find journalistic Catalines to whom he could say: *Quosque tandem abutere nostra patientia, O Catalina!* The Bloomington *Eye* is sadly in need of a pair of spectacles with which to read the act of Legislature creating the Illinois State Board of Health, and that will enable it to see what the Board has done and is doing. The Board was created for two objects: 1. To promote and take care of the sanitary condition of the State of Illinois. 2. To regulate medical practice in the State.

It has been but a few months since we showed (THE JOURNAL, June 9, 1888, p. 719–720) that the tax-payers of Illinois are fully reimbursed for all the expenses of the State Board of Health by what the Board saves to the State in its sanitary work; that in one instance, the small-pox epidemic of 1880–82, the Board caused a saving, outside of Chicago, of 1,517 cases, 320 lives, and more than $2,790,000 (exclusive of actual life-value). Dr. Farr estimated each life as worth $795 to the State; so that the saving in life value was $254,400; and we thus have a total of $3,044,400 saved by *sanitary work* at one time, not to speak of what has been done since 1882. In regard to the regulation of medical practice, careful estimates show that since the Board has practically cleared the State of itinerants, quacks, and charlatans, two years ago, $450,000 have been saved to the people of the State.

We may say, then, that the case stands as though the State Board of Health had deposited with the State Treasurer $3,494,400, from which to draw interest for its maintenance. At a rate of interest of 3 per cent. this would give the Board $104,832 annually, which amount, we may remark, the Board is *not* spending. The expenditure of the Board from the State Treasury for the fiscal year ended September 30, 1888, was the small sum of $8,559.25. The State Railway Commission spends more than this and does far less work. If the Bloomington *Eye* cannot see this we would advise it to consult an oculist and an arithmetic. If the people of Illinois are unwilling to pay less than 3 per cent. on all moneys actually saved to them, they have not the business tact and foresight for which we give them credit. The house to house inspection and State sanitary survey, which have been carried on since 1884, have done a great deal towards preventing disease and reducing the death-rate of the State. If anyone can make out a balance in favor of the medical profession on account of a board of health, we shall be glad to see how it is made. How much money was put into the pockets of the physicians of Illinois when the State Board prevented 1,517 cases of small-pox?

In the yellow fever epidemic of 1878–79, the action of the Board saved thousands of dollars to the State; and with the Sanitary Council of the Mississippi Valley it has done a great deal in keeping yellow fever out of this section. It has done efficient work in preventing the introduction of cholera into the country. Since the organization of the Board epidemics of scarlet fever, diphtheria and typhoid fever have been less prevalent, and when outbreaks of these dis-

eases have occurred, they have been limited, to a great extent, through the Preventable Disease circulars of the Board. It is but a few months since the Secretary of the Board refused to quarantine against yellow fever refugees at Cairo, when quarantine would have been wholly unnecessary, and thus saved thousands of dollars to the Contingent Fund of the Board, and from $50,000 to $100,000 to the business interests of the State. The Illinois State Board of Health has also been active in securing the coöperation of the various State Health authorities in preventing the introduction and spread of the various epidemic diseases.

Admitting for a moment that one of the functions of the State Board of Health is that of "a mutual protective society for the profession of Illinois," we may ask if certain facts do not justify State protection of the profession. Is there any other profession that gives its time, skill, and services so freely, and so gratuitously to the people of the State, as the medical profession? Who gives gratuitous service to the poor man, in and out of the hospital, newspaper editors or doctors? Who is most frequently robbed of just earnings, the merchant or the doctor? Who gives gratuitous advice most frequently, thus cutting off his own income, the lawyer or the physician? When an epidemic is raging, who so often gives time, health, and even life to aid the sufferers and stay the disease, as the doctor? Can the editor of the Peoria *Transcript* and Bloomington *Eye*, tell us of a legal dispensary, to which people go for free advice when they are well able to pay for it? Can they tell us of a clothing, a food, a fuel dispensary to which dishonest, well-to-do people go under the guize of objects of charity and obtain relief for which they are fully able to pay?

The suggestion that "any justice of the peace is empowered to act in behalf of the protection of public health," is one that no one in full possession of the common mental powers of the human being would make. Why not leave health matters to the shoemaker, the coalheaver, or the editor of the country paper? Either one knows as much about health matters as the justice of the peace. And why not give over the entire management of the asylums for the insane to the County Clerks, the State Railway Commission to plumbers, and the financial management of the State to the Sheriff of Sangamon County?

After all, it is not difficult to account for such expressions of irresponsible opinion as those quoted. The State Board of Health, by driving itinerant quacks and Indian doctors from the State, has reduced the income from advertisements of some of the newspapers. *Hinc illæ lachrymæ.*

SANITARY INFORMATION BY COMPARISON.

DR. HORLBECK, of Charleston, has recently visited several of the large Northern cities gathering data for a report to the Charleston Board of Health on the sanitary system of the city. This method of obtaining information in regard to health and sanitary matters is certainly to be commended, as likely to be much more productive of good results than information acquired from books and printed reports. And since, according to the recent reports of the Registrar-General of Great Britain, there has been so much improvement of late years in the sanitary condition of Great Britain, notwithstanding the crowded condition of the population, it is very probable that it would be productive of good results if some of our health officers would pay an occasional visit to the Victorian Kingdom, and see kow it is kept in such a healthy condition.

Not to speak of the many matters, methods, and institutions of sanitary interest that may be found on the Continent of Europe, it is not too much to say that any State would be largely the gainer that would send an intelligent health officer on a one year's commission to England and Scotland to study their sanitary institutions and methods. At this distance we are likely to think that a visit to one or two cities would be sufficient. Such is far from being the case. One can find something new and interesting in sanitation in almost every city of Great Britain. The sanitary methods of Edinburgh differ from those of Liverpool, and those of Liverpool from those of Manchester. The sewage farms of Edinburgh could be compared with those of a few other places in Great Britain, and these with those of Berlin. The end is the same—the prevention of disease and reduction of death-rate; but the means by which the end is attained are often essentially different. Actual knowledge, gained by actual see-

ing and experience is always more valuable than that gained from reading.

The proof of what we say may be found in the enormous strides in the management of asylums for the insane, due in great part to actual comparison of methods in various institutions in all parts of the world. One or two thousand dollars, or even more, spent in such comparisons and observations, might be the means of saving fifty times the amount to a State or City in less than five years. The amount of money spent in this country, annually, upon useless experiments, because of ignorance of what has been done, and of ignorance of suitable methods and conditions for certain places. At best, health officers have far too little practical preliminary training, which is certainly as necessary for their efficiency as is hospital practice for medical students before they enter upon private practice.

EDITORIAL NOTES.

Opium Smuggling on our Northern Border.—A few days since a wagon loaded with 800 pounds of crude opium was seized and the driver arrested by United States Revenue Officers on the Dakota line west of St. Vincent. About the same time 476 pounds, prepared for smoking and packed in boxes, were seized at Denver. The boxes had been sent from St. Paul, marked "household goods" and consigned to A. Neilson, who was also arrested. Another large amount, valued at about $20,000, was found by Customs Officers in a shanty near Port Hope, where it had been landed by a schooner from Sarnia, Ont. The man in charge of the opium in the shanty made his escape. These several seizures, added to the recent developments with which our readers are familiar, render it quite certain that an extensive and well organized system of opium smuggling has been carried on for some time through the British possessions and over our border at various points. The knowledge now in possession of the United States revenue officers will probably enable them to break up the illicit trade, and punish, at least, some of the chief offenders.

Water-Supply of Jersey City.—Sixty physicians in Jersey City have signed a report to the Board of Works, saying that the water of the city is good enough to drink. The Passaic River receives the sewage and street washings of Paterson, N. J., the sewage and drainage of Pompton and Passaic City, it is said, and the offal from slaughter houses, the waste from factories, and the drainage from the dwellings along the river. Several chemists have found the water of the Passaic River contaminated by sewage. The physicians of Newark (supplied with the same water) assert that the water-supply of that city is impure. The Croton water is much better than that supplied to Jersey City, and yet Drs. John C. Peters and Cyrus Edson say it is far too impure for New York. As a matter of fact, it would be far better if physicians were to trust to expert analyses rather than to personal opinions, possibly not well founded. No water is good enough to drink if it can be made better.

An Incompetent and Useless Officer is the present Coroner of San Francisco, if he may be judged out of his own mouth. The City Physician of San Francisco has recently resigned, and his letter of resignation was uncomplimentary to the Sheriff and Coroner. The Coroner stated at the meeting of the Board of Health that time and time again he had shielded the City Physician "to prevent the too evident fact of his incompetency from showing itself to the public." If the Coroner spoke the truth he is an unfaithful officer; if he did not speak the truth he is equally unworthy of confidence. In either case the city would probably be the gainer were he to resign. At best, the sooner the non-medical coroner becomes a thing of the past, the better for all concerned.

Sanitation in India.—During the 20 years ending 1885, says Surgeon-General G. Bidie, the deaths from small-pox in India averaged over 33,000 per annum, and for every death about 10 persons had the disease and suffered mutilation. In the Madras Presidency the four great destroyers of human life are cholera, small-pox, fever and bowel complaints, the average number of deaths from these diseases alone being about 339,000 every year. In the 50 years ending 1886, the total losses to England, France, Germany, and Austria on battle-fields amounted to but 386,000, against the annual 339,000 of the Madras Presidency from disease. The country is studded by towns and villages that have been rendered terribly foul by the filth of centuries.

DR. H. G. WILDMAN, of the firm Wildman and McCoy, of this city, whose license to practice medicine had been revoked by the Illinois State Board of Health on account of alleged unprofessional practices, took an appeal to the Governor of the State, who has now reversed the decision of the State Board. Would it not be a benefit to all parties to have the Chicago Medico-Legal Society, composed of intelligent medical and legal gentlemen, fully discuss and endeavor to define the proper powers and duties of the State Board under the State law for regulating the practice of medicine? Does the Board possess both legislative and judicial powers, or neither?

DISEASED MEAT AS FOOD.—The State Board of Health of New York recently received a communication from Monroe, N. Y., to the effect that pleuro-pneumonia had broken out among the cattle there, and that 150 cattle had been killed. The local health officer asked whether the cattle so killed should be allowed to go on the market as beef. An emphatic negative answer was returned to this part of the dispatch, and the officer was directed to prevent any such use of the carcasses. It is a commentary on modern methods of educating the people that health officers need ask such questions.

LARYNGOTOMY ON A HORSE.—Dr. S. W. B. Werntz, a veterinary surgeon of Philadelphia, recently performed laryngotomy on a valuable horse, for the condition known as "weazing." After the wound was closed the horse took food and water without difficulty, and at last accounts seemed to be doing well.

A NURSE'S HOME has been opened in Philadelphia, having been established by the managers of the Pennsylvania Hospital. The Home affords accommodations for twenty-five nurses. The rooms are well fitted up, and the nucleus of a library has been formed.

AN ANATOMICAL SOCIETY has been organized by the students of the University of Maryland, DR. J. EDWIN MICHAEL being the President. The University Museum is the place of meeting and study.

DR. J. B. BOWEN, a prominent physician of Bridgeton, N. J., died on Dec. 12. He was 50 years of age, and was graduated from the University of Pennsylvania in 1861.

SOCIETY PROCEEDINGS.

Gynæcological Society of Boston.

Regular Meeting, May 10, 1888.

THE PRESIDENT, HORACE C. WHITE, M.D., IN THE CHAIR.

DR. SAMUEL N. NELSON exhibited

AN EXTRA-UTERINE FŒTATION,

and the pelvic organs of a patient who had died from abdominal hæmorrhage due to rupture of the sac. On opening the abdominal cavity at the autopsy it was found to be filled with clotted blood intermingled with the coils of intestine. In the right iliac region was the ruptured sac from which the blood had escaped. This was found on dissection and removal to have originated in the fimbriated extremity of the right Fallopian tube. The sac was about 2½ inches in diameter, and contained a fœtus about 4 inches long. The uterus was enlarged, the cavity measuring 4 inches, and the anterior wall on section showing a thickness of 1 inch, including a well marked decidua, which was ¼ inch in thickness. The left ovary and tube were normal.

DR. HENRY O. MARCY: The history of the case from which was removed the specimen just shown was very interesting. Mrs. X., æt. about 35 years, was rather fleshy, with thick abdominal walls. She was the mother of seven children, but had not been pregnant for seven years, since which time her menses had been irregular. The patient suffered from indefinite abdominal pains with nausea, with sensation of sinking at the stomach. There was a slight uterine flow which, for the most part, confined her to the bed for four weeks prior to death. During this time she steadily lost flesh and strength. The breasts were soft and flaccid. The abdomen was slightly tender on pressure. The uterus was somewhat enlarged and slightly retroverted, but easily movable. There was no enlargement to be felt about the uterus by the most careful examination, and extra-uterine fœtation was dismissed from the discussion. She had seemed gradually to improve until the night before death, when she was seized with most excruciating pains resulting in collapse. She was seen by Dr. Nelson and me a little before her death. The cause of the extreme condition at that time was plainly to be attributed to hæmorrhage within the abdominal cavity from unknown cause.

DR. LEVI F. WARNER: In these cases there is generally nothing that calls to the mind of the physician the real condition of things. Usually they are not suspected. Once Dr. Hitchcock did suspect the condition, and he saved the patient's life by having everything in readiness for opera-

tion. In a certain case coming to my knowledge the doctor aspirated and withdrew 2 ozs. of fresh blood, and it was called an hæmatocele by an expert. The aspiration was continued until the woman died. Here the doctor was thrown off his guard, for the woman was 42 years old; she had been married twenty-one years and had never before been pregnant. She was in good general health, and was having excessive flooding.

DR. MARCY: I have seen two other cases. Mrs. M., æt. about 30 years, had been married five years and was never before pregnant. She was a delicate girl, had menstruated with difficulty but somewhat regularly. Five months previous to death she suffered from nausea and vomiting with general abdominal discomfort, bearing-down sensations, etc. She had flowed more or less continuously for five weeks. The uterus was somewhat enlarged, anteflexed, easily movable, not tender, os patulous, and the sound was introduced 2¾ inches. There was a slight fulness to the right of the uterus, which was slightly tender on pressure; this was supposed at the time to be a periuterine inflammation, and attributed by the patient to overstrain. She was sent to the country for recuperative rest. When seen six weeks later, the patient was sick in bed with symptoms of intestinal obstruction. There was a distinct tumor, size of double fist, a little to the right of the median line, above the pubis, tender and only slightly movable. The uterus was deflected to the left and was 3½ inches in depth. I advised an exploratory laparotomy with the diagnosis uncertain. After consultation with an expert from New York City the operation was declined. Death occurred a few days later, and the autopsy exhibited a ruptured sac with the fœtus, 5 inches in length, lying free in the abdominal cavity. The coils of small intestine were agglutinated about the mass, forming a distinctive intestinal obstruction. The pressure from above had been sufficient to cause rupture of the sac, and its contents emptied into the abominal cavity. Peritonitis supervened, ending in death. Dr. Marcy exhibited the specimen, together with longitudinal sections through the entire uterus, which were exquisitely mounted between glass plates made by Dr. Nelson, of Boston. They are sufficiently thin to serve for projection upon the screen by the stereopticon. The endometrium showed the decidua vera beautifully formed, with its enlarged utricular glands. The uterus was nearly double its normal size.

The second case I saw perhaps twelve years ago in consultation with Dr. Wellington, of Cambridge. A young colored woman was in collapse. She had not menstruated for about three months, and the symptoms of internal hæmorrhage were so clearly marked as to make the diagnosis of extra-uterine fœtation with rupture very probable. I thought laparotomy advised, returned for instruments but, unfortunately, examined the authorities without finding a precedent for the operation; consequently I failed to do what my judgment dictated. Death occurred within twelve hours. The autopsy revealed a ruptured tube, with the lower abdomen filled with clotted blood. The sac was not larger than a hen's egg. I believe the operation would have been feasible.

DR. WM. G. WHEELER: A trouble in making the diagnosis in these cases is that flooding is frequently taken for menstruation. I know of one case in which the fœtus was three to four months old and the woman insisted that she had never been pregnant and that menstruation had continued up to a very few days. The sound introduced showed the size of the uterus to be increased, and this was all that could be made out. The woman died and a quart of pure blood was found in the abdominal cavity, together with the fœtus. Here hemorrhage was mistaken for menstruation.

DR. AUGUSTUS P. CLARK: At one time Dr. Thomas advocated electricity for these cases, but lately this method of treatment has been criticized. Can laparotomy be substituted and is it advisable?

DR. HELEN L. BETTS: What else would Dr. Wheeler do?

DR. WHEELER answered: A radical operation.

DR. MARCY: Dr. Thomas has reported seven or eight cases in which the diagnosis was clear, and electricity destroyed the fœtus, but the general feeling now is in favor of laparotomy. Dr. Gordon has told of an operation with cure. He opened, removed, and treated as if he had removed a tumor. There has been only one other case in the United States similar to this. If the condition of things is known do not wait for bad results. Probably the cases are more common than are supposed, for the doctors will not report their fatal cases. I know of a case where a woman died at the age of 80, and a calcareous fœtus was found which she had carried for 40 years. Also another case where there was a cyst containing fœtus bones. Here nature had acted as a surgeon.

DR. WARNER: I recall the case in which the fœtus bones were found after 40 years. Dr. Hitchcock made the diagnosis in Dr. Gordon's case and did the operation. If the diagnosis is certain in a given case we may probably save the patient.

DR. CLARK: Thomas does not say anything about the future of his cases. What is the use of destroying the fœtus? Septicæmia may supervene if rupture should occur later.

DR. SAMUEL N. NELSON made a demonstration of the

BEST METHOD OF STAINING TUBERCLE-BACILLI IN SPUTUM.

The reader said that his apology for bringing a subject not strictly gynecological before the

society was its manifest importance indirectly. The great advantage to be derived from the examination of sputum was to ascertain the presence or to determine upon the absence of the *bacilli-tuberculosis* before the physical signs of a cavity are apparent or distinct. In a well marked case where percussion elicits relative dulness and sometimes even flatness; when the respiratory sound, obtained by auscultation, is either bronchial or cavernous; and when the correlative vocal signs are present, viz.: either bronchophony with the loud and whispered voice or exaggerated vocal resonance; and especially where these are taken in connection with the cough and expectoration, the emaciation and other symptoms belonging to the history of the disease, then it is not necessary to go to an expert bacteriologist for a diagnosis; for he can only corroborate that which you have already made. When, however, the physical signs are not well marked, a careful examination of the sputum may make certain a doubt, and will guide you materially in the treatment of any given case and aid your prognosis.

A careful résumé of the various methods, with their modifications, that have severally been recommended by various authors for the detection of the bacilli-tuberculosis was then given. In general, they all have the same foundation, viz.: the fixation of a thin layer of the suspected sputum on a coverglass; the diffuse staining of this layer with one of the aniline dyes; the bleaching, which affects everything except the tubercle bacilli themselves, so that they are alone brilliantly stained and all else is colorless; and lastly, not important, but advantageous, the staining with a contrast color, which stains all other microörganisms, both bacilli and cocci, as well as the epithelial cells and pus cells.

The primary staining may be done quickly or slowly. When done quickly, the staining fluid must be boiled in contact with the coverglass-film; when done slowly the staining fluid is applied to the coverglass-film for 12 to 24 hours at the ordinary temperature.

After trying nearly all of the methods that have been recommended for the primary staining, the reader said that he preferred the rapid staining, using the formula of Ziehl:

℞.	Fuchsin	1 part
	Alcohol	10 parts
	Carbolic Acid	5 "
	Water	100 " ℳ

Instead of boiling this staining fluid in a watch glass with the coverglasses floating film downwards on the surface of the staining fluid, as is ordinarily recommended, the reader prefers to hold the coverglass film upwards with a pair of forceps, to place a drop or two of the staining fluid thereon, and to boil it by holding the coverglass over the flame of an alcohol lamp. After boiling it is allowed to cool.

For bleaching the reader uses nitric acid, diluted (nitric acid 1 part to water 4 or 5 parts), into which the stained coverglass is dipped (without washing) and at once transferred (without washing) as quickly as possible to absolute alcohol, through which a few passes are made, and then it is washed under the stream of the water bottle. The action of the acid changes the red color of the fuchsin to a nearly black color, but in the alcohol the red color is restored and then fades. Care should be taken not to bleach too much, for by the prolonged action of the acid and alcohol, even the tubercle bacilli themselves will yield their color.

When properly bleached the contrast stain, methyl-blue, is applied, in watery solution, and, after washing, the coverglass can be mounted and examined with the microscope, when *the tubercle bacilli, if present, are seen as red rods lying among other blue-stained elements.* A good $\frac{1}{4}$ or $\frac{1}{6}$ inch dry lens will distinguish them, but their characteristic formation can only be seen with higher powers, *e.g.*, the oil immersion, $\frac{1}{8}$, $\frac{1}{12}$, or $\frac{1}{18}$ inch lenses, with an Abbé condenser, *i.e.*, under the best conditions of illumination.

Instead of fuschin, gentian violet may be used for the primary stain, and, in this case, vesuvin (Bismark brown) must be used as a contrast stain, instead of methyl blue.

Résumé:

A. Stain with fuchsin.

B. Bleach by dipping into diluted nitric acid (1 to 5).

C. Finish bleaching in alcohol.

D. Wash.

E. Stain with methyl blue (contrast stain).

F. Wash.

Then mount and examine with microscope.

After explaining the method of staining the *bacilli-tuberculosis* the reader demonstrated the method by examining specimens of sputum brought for the purpose by members of the Society. The result of the examination was, in each case, satisfactory to the one who brought the specimen, although certain test specimens were brought that were not supposed to contain any tubercle bacilli.

Philadelphia County Medical Society.

Stated Meeting, November 28, 1888.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. WILLIAM HUNT read a paper on

DIABETIC GANGRENE.

There are about twenty pages of the great *Index-Catalogue of the Library of the Surgeon-General's Office* given to each of the subjects of

gangrene and diabetes. There are but two monographs catalogued, one by Giron, Paris, 1881, and one by Peyrot, a student, 1878, who reports, I think, thirty-nine cases; these are not in the College of Physician's Library. Then ten isolated cases are reported in the French journals from 1856 to 1868; most of these are in *L'Union Médicale*. I will give a brief summary of these cases:

1. A case of phlegmon and gangrene of the anterior and external region of the right knee. Free incisions were made. The patient was discovered to have intermittent diabetes. There was recovery from the local lesion.

2. A patient known to be diabetic had his right toe to slough; it was detached with scissors. From this he recovered slowly. He was placed on strict antidiabetic treatment, but was careless and the whole foot became gangrenous. There was great abdominal pain, and necrosis of the gastric mucous membrane was diagnosed; death speedily followed; no autopsy.

3. A diabetic of 60 years of age is reported, who died from extensive gangrene of the thigh and back.

4. A doctor, æt. 65, fell down from an attack of cerebral congestion; never sick before. Diabetes was discovered. This was on the 21st of the month; on the 25th great mortification took place involving the cellular tissue deeply, followed by death.

5. A man had a leg amputated for what was thought to be senile gangrene. He recovered slowly from this, then the other leg was attacked, first at the toes. He was found to be a diabetic.

6. Another diabetic is mentioned with spontaneous sphacelus of the right toe.

7. A colonel with his right foot gangrenous died of diabetes. Other cases are here and there mentioned with spots of gangrene.

8. A man of 70, after great pain, had gangrene, first in left toes, then in right. The disease was thought to be senile, but he was found to be a diabetic. The absence of ammoniacal changes is noted in this case, and the question is raised whether the urine of diabetics undergoes these changes.

9. A case of complete destruction of the plantar aponeurosis by gangrene in a diabetic is reported with recovery from that lesion.

10. A man of 55, cut his corn—gangrene followed and diabetes was present; he died. He had before this no symptoms of diabetes—in fact, was never sick. He went through troublesome family affairs, which he felt deeply, some time before.

These patients where the sex is given were males. Mental troubles are more than once given as a cause. Intermittence in the appearance of sugar is noted in two cases. In fact, in one of them, the interne tells his chief, that he (the chief) had made a mistake. The interne had examined the urine when sugar was absent, but it returned in full. The majority of these cases were in the better walks of life. But the work worthy of a higher dignity of title than a monograph is by Marchal (de Calvi), Paris, 1864: *Recherches sur les Accidents Diabétiques et Essai d'une Théorie General du Diabète*. Some of his cases are among those quoted above. Marchal's book has reports of 133 cases of all sorts of what I may call extra lesions occurring during the progress of diabetes, collected both before and after the discovery. Of the 133 cases, gangrene *per se* occurred in fifty-seven. The seats of it were, in the lower extremities 35, lungs 7, hand 3, pleura 2, shoulder 1. Nucha (not ordinary carbuncle) 2, nose 1 (necrosis). Plantar aponeurosis 2, ribs necrosis 1, forearm 1, back 1, gangrenous plaques 1, although the latter are reported in several other cases. I shall not pretend to particularize these cases I refer any one interested to. My purpose is to show that gangrene in diabetes is something more than a coincidence. The extraordinary case No. 39, almost of itself sustains the position. A man of 58 years, came under observation. The case is given in detail and is thus summed up by Marchal. "Thus in the space of six years from 1850 to 1856, the patient was attacked successively with first, a necrosis of the first phalanx of the second toe, which was amputated; second, with a sphacelus of the whole foot and inferior part of the leg of the same limb, which was also amputated; third, with a skin gangrene of the other leg which gave place to a callous ulcer; fourth, with a gangrenous inflammation of the base of the great toe, which left a deep and intractable ulcer; fifth, with a sphacelus of the first four toes, which were also amputated."

Any fair-minded man would say that, if we can develop so much in such a limited range of inquiry and in such a short time, and then ask himself what might be found out by further inquiry, not only among ourselves but throughout the country, diabetic gangrene is certainly something more than a mere coincidence of the disease diabetes. I sent out a small number of inquiries to physicians and surgeons in our city, selecting those whom I thought would know most about the matter, and also made personal inquiries of some. The questions were: 1. How many cases of diabetic gangrene have come under your notice or treatment? 2. What was the social standing of the patients—wealthy, medium, poor, hospital, or private—their ages and sex? The next question would appear to be rather a side issue, but it was made, in passing, to ascertain whether what is almost universally stated about diabetes is legendary, or is the result of carefully collated observation; it also bears upon gangrene of the pulmonary organs—it is: 3. How many of *all* of your

diabetics had consumption, or died with it, and was there anything like gangrene of the lungs. I received thirty answers, including myself; of these, seven had seen no gangrene. They were Tyson, Longstreth, A. V. Meigs, Hutchinson, Packard, Sinkler, Keen. Twenty-five reported 64 cases, viz.: T. G. Morton 13, Da Costa 5, Hunt 5, Agnew 6, J. C. Wilson 3, S. Solis-Cohen 3 (two of them in consultation with other practitioners), Dr. Brush 4 (one case intermittent), D. F. Woods, J. H. Brinton, S. W. Gross, E. L. Duer, Murray Cheston, W. A. Edwards, J. W. Hearn, 2 each. John Ashhurst, Jr., Elwood Wilson, L. K. Baldwin, W. Osler, James Darrach, A. Fricke, W. F. Atlee, C. B. Penrose, J. H. Musser, W. B. Hopkins, T. K. Morton, 1 case each.

I was particular that the cases should be known by actual examination and record to be diabetic. Thus, Dr. Morton at first answered me that he had seen 20 or 25 cases, not knowing my object. I have no doubt that he has seen that number, for he and I have had our attention drawn to this matter for years, but he actually verified the 13 in his list. Dr. T. R. Neilson was certain he had two cases to report from the Episcopal Hospital, but he found no record of sugar, so I rejected them. I mention these facts to illustrate the care that has been taken. The ages, where given, were: 1 between 30 and 40; 2 between 40 and 50; 11, 50 and 60; 12, 60 and 70; 10, 70 and 80; 2, 80 and 90. One exceptional case of Morton's a diabetic aged 19, in whom gangrenous sloughing took place after a needle operation for cataract, is down, and one of S. Solis-Cohen's cases was a young female. Of the sexes given, 24 were females and 25 males. Of social standing, where given, 16 were wealthy, 23 medium, 9 poor, and of these 6 were in hospital. Dr. Brush reports a most interesting case of a female diabetic aged 40, a lunatic. She had large ecchymoses on her limbs which became gangrenous; she died. The autopsy revealed a gumma the size of a large pea in the floor of the fourth ventricle. The seats of gangrene, where reported, are: Lower extremities—below the knee, 37; thigh and buttock 2; nucha (not ordinary carbuncle) 2; external genitals in female 1; lungs 3; fingers 3; back 1; eyes 1. Had I allowed myself to include ordinary carbuncles and boils in the gangrenes, to which class they belong, the list would have been greatly increased.

How many diabetics have consumption or die of it? Marchal says he has known of but few diabetics to die of consumption, but he is rather inclined to adopt the general view. A pamphlet published at Oxford in 1745, called "A Mechanical Inquiry into the Nature, Causes, Seat, and Cure of Diabetes, with an Explication of the most Remarkable Symptoms," says, if the patient be "too far advanced by a neglect of proper remedies, the person so affected in reality dies of *a* consumption." Dr. Tyson has notes of 55 cases in private practice since 1884. Of these, 18 have died, 4 *of consumption*. Dr. Longstreth says a very large proportion die of pulmonary complications *called* consumption.

Dr. A. V. Meigs has notes of 5 deaths from diabetes, none from consumption, nor does he know of any consumption in those diabetics who have passed into other hands, nor, as I understand, of any in his father's practice. Dr. James H. Hutchinson remembers 1 diabetic who died of consumption. Dr. Packard remembers none. Dr. J. Ashhurst, Jr., does not remember a consumptive. Dr. Sinkler: none of his cases died of consumption. Dr. Da Costa does not remember a case of gangrene of the lungs, but has seen a sufficient number die of phthisis as to believe in the generally held opinion. Dr. Agnew has seen no consumption, one of gangrene of the lungs. Dr. Elwood Wilson does not remember a death from consumption. Dr. J. C. Wilson cannot answer as to consumption, thinks it not so common as supposed; seen one case of gangrene of lungs. Dr. D. F. Woods has had no consumption deaths. Dr. L. K. Baldwin, one case complicated with consumption. Dr. Osler, two died of consumption, one of gangrene of lungs. Dr. Darrach, no consumption. Dr. S. W. Gross, none; Dr. Keen, none; Dr. A. Fricke, none; Dr. J. H. Brinton none; Dr. Hearn, none; Dr. Hunt remembers one woman who was said to have consumption with diabetes. Dr. Brush, one phthisis death, and reports one lady of 71, three of whose family had consumption; she escaped it. Dr. F. G. Morton, one; Dr. W. A. Edwards, none; Dr. Murray Cheston, six cases, no consumption; Dr. W. F. Atlee, none; Dr. T. S. K. Morton, none; Dr. Musser says he knows the cause of death in nine cases. None of phthisis.

Thus among all the diabetics noted by the practitioners mentioned, and we do not know how many are included, but certainly the 55 of Tyson, the 64 of my collection, the 9 of Musser, and 16 non-gangrenous ones specified by 7 others, in all 144, we find but 11 deaths from phthisis And yet Dr. Thomas S. K. Morton in an essay on diabetes has somewhere picked up a statement, from an authority whose name he has missed, that 43 per cent. of diabetics are killed by phthisis sooner or later. Roberts, 1885, says that one-half of them die with cough, catarrh, phthisis, and other lung complications, when prolonged to the third year, and Aiken quoting him, evidently in mistake, says to first year. Dr. George B. Wood says, "In the great majority of cases the patients die of phthisis," Drs. Da Costa and Longstreth, whose opinions are entitled to great weight, make general statements in their answers; Dr. Longstreth cautiously stating it is *called* consumption. From a conversation with Dr. W. Pepper, who gives no return, he adopts the consumption view, and Dr. J. Cheston Morris coincides.

S. Solis-Cohen says: "I cannot find accurate statistics as to consumption. Think at least one-third of the cases that I have seen, died of pulmonary affections." Griesinger, quoted by Niemeyer, says "one-half of the cases die of phthisis." Watson says, "some think phthisis universal in diabetes, but it is not so." Flint, quoting Ogle, reports fourteen cases, with deaths from scrofulous or tubercular disease in seven of them. Niemeyer says "that pulmonary tuberculosis hastens the fatal issue." What one of latest authority, C. Hilton Fagge (1886) says, is important. "Diabetes is frequent cause of *a* phthisis (almost the 1745 expression) which is peculiarly pneumonic in character. Its relation to ordinary pulmonic disease is still doubtful," and after giving certain facts he says, "hence it supports very strongly the opinion that the pulmonary affection in the disease is not of a tubercular origin." He kept notes of the diabetic deaths in Guy's Hospital and in twenty years out of 40 such deaths, 17 died of phthisis. You will notice how indefinite and general some of the statements above given are, without figures to sustain them. Blau, in his review in the late number of *Schmidt's Jahrbuch*, already quoted as to gangrene under the head of "diseases of the lungs in diabetis," says, in substance, "that the question whether so-called diabetic phthisis is the same as ordinary tubercular disease of the lungs is only to be settled by the proved presence in both of the same bacillus." Authorities, Inmérman, Rütimeyer, von Merkel, and von Leyden, are quoted as having observed absolute differences between the two diseases both from examinations of sputa and also by post-mortem. A case is given in which during life the patient had all the symptoms of tubercular phthisis. Except that bacilli were not found in the sputum, and at the autopsy the appearances were totally different from those found in that disease, and these appearances are noted in the text. The bacillus tuberculosis was nowhere found. A case having almost the same post-mortem appearances as this one is reported by Da Costa, in the *Philadelphia Medical and Surgical Reporter*, vol. i, page 8, January, 1887. The bacillus, as in the preceding case, was absent.

This record, considering the large number of consumptives in communities like ours would seem to show that the cases in point *are consumptives with supervening diabetes, and not diabetics with supervening consumption.* I leave the question for wiser heads to determine. Diabetics die, as my inquiries and experience confirm, with coma, œdema of the lungs, and exhaustion.

I have nine cases to speak of, five of whom were gangrenous, and three rapidly advancing toward it when death overtook them. One was peculiar and unverified; all are dead; one was in medium circumstances, all the others decidedly wealthy. The ages ranged from 50 to 93, four of them being above 70, five were women, four men. In none of them was the classical emaciation present at any time. The disease was intermittent in two. The urine in one of these cases would range as low as 1010 specific gravity, with slight traces of sugar, and then advance to 1030–1035 with evidence of abundance of it. I took a specimen of this low gravity urine to Dr. Casper Wister, of the Mutual Life Insurance Company of New York. He tested it himself and was much surprised, and concluded not to accept statements of "no sugar," founded upon specific gravity alone. Another case also ranged from low to high at varying times, but not so marked as the first. This teaches us not to be too sure in saying, as we all often do, "there's no use looking for sugar in that," when the gravity is 1020 and under. Austin Flint, Jr., reports a diabetic case with the gravity of 1011½. The seats of the gangrene in five of my cases were, foot and leg below knee three, thigh and buttock one, nucha (not ordinary carbuncle) one.

Gangrenes, as a rule, are generally of the soft or humid kind. This, however, depends much upon the part involved. Where the tissues are succulent, the gangrene will be also of that character; where they are composed mostly of skin, tendon, and bone, they will approach the senile gangrenes in appearance. The remark made by Holmes Coote is applicable. He, speaking of the terms used in the descriptions of gangrene in general, as dry, moist, etc., says, "when death of a part takes place rapidly, the vessels still contain blood and the usual fluids, and the mortified parts are moist and soft. When on the other hand, the death is slower, there is usually a deficiency of the supply of blood; the vessels become empty and the part hardens and withers." There is this distinctive difference between the diabetic and the senile gangrenes according to my observation. The former rarely or never present the clear-cut line of demarcation between the dead and the living parts that is characteristic of the latter. This fact, with a want of the decided dryness and shrivelling of the senile variety, should suggest the diabetic form, but in any case the urine should be examined.

I have this interesting observation to make about one patient: A lady, æt 93 years, who did not have gangrene. This past summer she was in more than usual good health. I know positively she had no diabetes until shortly before her death; not only from the want of rational symptoms, but also from recent examining of the urine. I went with her to Newport in June, and left her there. In passing through Newport in the latter part of July, I saw her; she was perfectly well, and her delight was to drive twice a day. I was at Bar Harbor in August, and received a telegram asking me to come at once to

see her at Newport. She was dead before I arrived, and I learned from Dr. Cleveland, of New York, who attended her, that she was sick but eight days, and had developed an *acute* diabetes, which rapidly proved fatal. I had no hesitation in saying, that had she survived the first fierceness of the attack, she would have had to contend with gangrene. The opinion was given, not because of her age, but because of the diabetes.

Sugar in the urine has been developed by falls upon the head, and also in certain forms of apoplexies, but I have just made a, to me, most interesting observation.

In January, 1885, a wealthy gentleman, a long-time patient of mine, of most vigorous constitution, then 76 years of age, had an apoplectic seizure, from which he reacted, and finally settled down into a chronic semi-paralytic. On the 9th of this November, 1888, in the evening, I was suddenly summoned to see him by his son-in-law, a physician. He was comatose, face very much flushed, temperature 103°, pulse 120, and had Cheyne-Stokes respiration. There was no increase of paralysis of the extremities. Basic effusion was diagnosed. Under treatment he improved, and was very much better by morning.

His urine during his sickness had been repeatedly examined, and, with the exception, at times, of slight traces of albumen, there was nothing abnormal. On my morning visit, mindful of the symptoms of the night before, I proposed an immediate examination of the urine. This was done, and decided sugar reactions were produced by fresh Fehling solution.

Here was auto-physiology. Temporary pressure upon, and disturbance of the respiratory centers, and also pressure upon the diabetic regions of Bernard. As the effusion disappeared with the mending of the patient's condition, the sugar has gone with it, and now the tests give no traces of it. It will be interesting in this case if the patient survives, to note both as to sugar and as to gangrene.

I had written thus about this case, when I had occasion to make another note. I saw the patient daily for four or five days, when it looked as though matters were about to resume their old course, and I made the next appointment for two days ahead. But on the 15th I was summoned again. The patient was in deep coma, breathing 60 per minute, pulse 150. *The urine gave sugar reactions more decided than before.* Respiration could be stopped by reflex at once—that is, by any peripheral irritation about the mouth or thorax. This would occur on an attempt to give liquids, then after a few automatic adjustments, the breathing would go on as rapidly as before. Within two hours death took place. There was no filling of the bronchi with mucus. The patient simply stopped breathing. Pressure on the pneumogastric centers was profound. It was a quick and permanent application of the air-brakes.

In practice we all have our puzzling cases. A distinguished, wealthy lawyer was attacked with an obscure disease. It was rapidly fatal. Dr. James Darrach was the physician, and I was sent for in consultation. It is not necessary to give the details. I cannot remember whether the urine was examined; certainly, I think, not for sugar. Symptoms of sepsis were marked, and among the incidents there was enormous swelling of the abdominal walls, both anteriorly and laterally. I made free and deep incisions into the flanks, and from the cellular tissue mephitic gases and fluids, like those that flow from moist gangrenes, came in abundance. I think, in the light of what has been developed in my researches, that that patient died from an acute attack of diabetic gangrene.

There was no consumption, or even a suggestion of it, in *any* diabetic of whatever kind that I have seen, except the one I vaguely remember, which I have already spoken of as being in the hospital when I was resident. I now submit, from what we have heard, whether among all the gangrenes mentioned in books and indexes, viz., traumatic, hospital, senile, symmetrical, spontaneous, puerperal, visceral, infantile, congenital, cutaneous, mephitic, spreading, exanæmic, arterial, static, dry, wet, moist, humid, white, etc., the much-neglected diabetic gangrene should not be included? We have seen that *diabetic* gangrene makes, with good reason, higher pathological claims to notice than most of the kinds above given. I should not be surprised to find, after thorough investigation, that in *numbers*, in civil practice, diabetic gangrenes would be found to hold the second place, traumatic gangrenes, including those from frost-bite, burns, and scalds, only exceeding them.

A few remarks upon the proximate and remote causes of diabetes which also have a bearing upon the production of gangrene. We have seen that diabetes is no disease of the poor in general. Drs. Tyson, Morton, and Darrach will give you some interesting facts about this.[1] I also have a good instance to add, illustrating the enchantment of distance even in science. Last Sunday I was speaking with Prof. Penrose on this matter of the poor and the rich, when he said, "And yet

[1] In the discussion which followed this paper Dr. Tyson said: "In regard to the infrequency of diabetes among the poor no better proof could be given than in the fact that in the Philadelphia Hospital in which more than a thousand patients are present at one time, it will often be impossible for weeks to get a case for lecture." Dr. Morton also stated: "An inquiry recently made of the superintendents of our State hospitals for the insane shows that although more than twenty thousand patients belonging to the indigent class have been under the care of the present medical officers of these hospitals, there has not, it seems, been a single case of diabetic gangrene in the institutions at Harrisburg, Dixmont, Danville, Norristown, or Warren." Dr. James Darrach said: "Dr. Hunt has mentioned that diabetes is a disease of the well-to-do, and referred to the rarity of the disease in hospital patients and among the poor. This would appear to be corroborated by the statement of Dr. Jordas, who states that in an aggregate of 22,735 admissions into, I think, four hospitals in Lisbon, there was not one case of diabetes; and of 5,700 deaths in 1862, four only were from this cause."

I don't know, Hunt; you remember the cases that used to be in the hospital when we were residents, and the work done in studying them under Drs. Wood and Pepper?" I remember all that, but did not remember the number of cases. I kept my own counsel, and next day I went for the record. The number of diabetics, as such, that were admitted into the hospital during Dr. Penrose's residency, 1851–53, two years, were just *three;* so, in the lapse of time, much work over a few cases is translated into the same work distributed over many cases.

From 1842 to 1888 inclusive, a period of forty-seven years, *fifty-nine* cases of diabetes were admitted into the hospital, an average of 1.28 cases per year. From 1842 to 1848 there was not a case; from 1858 to 1869 there was not a case, and in the first part of this time the Pennsylvania Hospital was practically the only hospital in our city for the respectable poor to go to for treatment. Thus, from the wealthy and middle classes of this community, I have brought to light more than twice as many cases of diabetes, most of them recent, as have been treated in the Pennsylvania Hospital for fifty years.

Diabetes seems, in its affinities, to be more nearly allied to gout than to phthisis. One of Dr. Cheston's gangrene patients was a man over six feet high, weighing 250 pounds. He was a waiter in a private family, and surrounded with all the accesories of wealth. I could not establish that excess in the use of wine or strong drink had much, if anything, to do with the production of diabetes. A diabetic drunkard is rare; I have never seen one. I think, however, that over-feeding plays a much more important part as a proximate cause. Aside from the boulimia that is often an accompaniment of the disease, it will be found that most diabetics are over-eaters in habit. I know that most of my patients were, to say the least, good feeders, and some of them excessive ones, and one was noted in this way. Well-to-do people, in times of peace and plenty, eat too much. The laboring classes may eat as much in quantity, but they work it off. Excess in food clogs, excess in drink crazes; so the former habit has the advantage in morals, but which kills most is a question.

I shall only glance at the theories of diabetes. Faults of the nervous, vascular, and visceral systems have been, respectively by some, and *all* together by others, considered to be at the bottom of the trouble. I incline to deranged vaso-motor effects (stasis or paralysis of the vessels, with or without atheroma or arterial sclerosis) as most explanatory. What better fact could we wish to sustain this position than the influence of disease on virility, a condition almost absolutely dependent upon normal vaso-motor function? Men with diabetes are mostly impotent; Marchal says, always so. He gives some strange cases of marital infelicities, such as unfortunate charges of infidelity by wives against their husbands, when really the poor fellows were helpless diabetics. One of these is described as a veritable athlete, and he was an example of the fact that in this disease great and peculiar strength in one direction may for a time coexist with great and peculiar weakness in another. The knowledge of diabetes is ancient, and, in looking over the old records I thought that I might stumble on one of diabetic gangrene, but in this I was disappointed.[2]

(*To be concluded.*)

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Nature and Origin of Tetanus—Compression and Costal Resection in Empyema—Unglazed Tissue Paper for Dressings—Disinfection of Instruments—Muscular Atrophy of the Limbs.

In my last letter I sent you a short extract of a note by Drs. Berger and Richelot on the contagiousness of tetanus. From a communication to the Academy of Medicine on the nature and origin of tetanus, it will be seen that M. Alphonse Guérin does not believe in the equine origin of the disease. He admits that tetanus is inoculable, but what the agents are that are inoculated has not yet been demonstrated. He says that one may inoculate fragments of flesh taken at the neighborhood of the wound which was the seat of tetanus, pieces of spinal marrow of the bulb, of cerebral matter, are equally inoculable. The blood alone is not. These experiments prove that there is a virus, but no one can say in what it consists. The transmission of tetanus by inoculation is therefore acceptable, but that which is not, is that the agents of this transmission are micro-organisms. That which is certain is that the cases of tetanus in the wounded dressed by the procedure of Lister, are extremely numerous. The agents of contagion would therefore be refractory to carbolic acid and to the other antiseptic agents. M. Guérin is disposed to think that this malady is engendered by a poison analogous to strychnine and to toxine of Brieger, which idea, he says, would be more satisfactory to the mind

[2] Coincident with the reading of the proof of this paper, I received (December 6, 1888) a copy of the Berliner klinische Wochenscrift, No. 47, November 19, 1888. It contains the first part of an article by Dr. Max Schüller, of Berlin, called "Ein Beitrag zur Kenntnisse der phlegmonösen und gränösen Process bei Diabetes." The author also intimates that gangrene, etc., is more than a mere coincidence in diabetes. He says: "While many cases of glycosuria, as, for example, those following experimental researches upon and injuries of the central nervous system, have found an essential clearing up, the relation between pus formations, furuncle, carbuncle, gangrenous process, and glycosuria is still quite dark. The view that these cases are essentially only complications of an unrecognized diabetes has still its adherents. I now have nothing new to offer as explanatory, and will consider this part of the subject no further."

than micro-organisms. To show that tetanus is not of equine origin, M. Guérin supports himself on the opinion of different authors, and in particular on that of M. Manoury, a veterinarian of Chartres, who, of 150 cases of tetanus that came under his observation, had never treated two tetanic animals in the same form, and had never seen a single case produced by contagion in man. M. Guérin then asks how the cases of tetanus observed at sea and in countries where the equine race does not exist, may be explained?

At the same meeting of the Academy, Dr. Polaillon, presented, in the name of Professor Dubreuil of Montpellier, a note, in which the latter vaunted elastic compression, combined with costal resections, in the treatment of empyema. The application of the compression is practiced in the following manner: The chest is surrounded by a Sayre's apparatus, except the level of a rib which had been resected. At this level, a tube is placed which enters the pleura and above the cotton wadding. The chest is then tightly surrounded with an elastic band. The compression is made only at the level of the part uncovered, the apparatus of Sayre preserving the other parts of the chest. Every day, before applying the elastic band, a cupping glass is placed on the opening of the pleura, by which means a small quantity of pus is obtained. The author concludes that, with this mode of treatment, the resection, which involves the ribs only to a very small extent, is certainly less dangerous than in Estlander's operation.

Dr. Bedoin has published in the *Union Médicale* an interesting paper on dressing with absorbent paper which is made of unglazed tissue paper, such as is employed for making cigarettes. These dressings are intended to replace gauze, lint, linen or cotton bandages, as being less bulky and less accessible to different septic germs than these latter are, and is also much less expensive. It may be employed with all the antiseptic precautions prescribed by Lister either in a dry or moist state. This paper is an excellent medium for most antiseptic remedies, and whenever indicated, may be prepared beforehand with morphine, belladonna, cocaine, iodine, etc. According to the author, the application of these dressings has been attended with excellent results in various cases, such as wounds, burns, blisters, affections of the skin and eyes, etc. Comparative experiments have shown that the absorbent property possessed by this paper lint is one-third greater than that of cotton lint. It is absolutely necessary to cover the dressings with an impermeable external covering.

Dr. Redard, in a note read by him before the Société de Chirurgie, insisted on the absolute necessity of disinfecting all surgical instruments and objects employed in dressing wounds. He considers that the methods generally employed for the purpose are defective, for it is only by prolonged contact with the antiseptic substance that instruments and sponges, etc., can be rendered sterile. Disinfection by heat, says the author, is an excellent method, but all instruments cannot be exposed to flame with impunity, and their immersion is only efficient at a temperature of 110° to 120° and when the contact with the liquid is prolonged during three-quarters of an hour for sounds, trocars, forceps, and during ten minutes for bistouries. Glycerine and oil have certain drawbacks, the former emits a thick strong-smelling smoke when boiling, the latter requires an apparatus for regulating the temperature. Dr. Redard highly recommends solutions of chemically pure chloride of calcium, especially when mixed with glycerine, boiling at from 110° to 120°. The method of disinfection by steam at a pressure at 110° with Dr. Redard's apparatus, prolonged during fifteen or twenty minutes is very simple, practicable and infallible.

At the last meeting of the Academy of Medicine in November, Dr. Desnos, physician to the Hôpital de la Charité, read a note on a case of muscular atrophy of the four limbs of very simple evolution, which came on during pregnancy and consecutively to obstinate vomiting. The case was that of a young woman in her third pregnancy, very much anæmiated by previous hemorrhagic metritis and in whom, all therapeutic means having failed, premature labor had to be induced at the fifth month of her pregnancy. From that time, the atrophy made no further progress, it remained localized in the four members, but with the aid of electricity and hydrotherapy improvement rapidly set in and the patient is now considered completely cured. Dr. Desnos entered at length into the pathogeny of these accidents and directed attention to divers hypotheses the most plausible of which being that of a myelitis affecting the anterior horns of the spinal marrow the cells of which preside over the nutrition of the muscular system. A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Headaches and other Nervous Symptoms due to Functional Eye-troubles. The Death of Dr. Sands.

At the last meeting of the County Medical Association Dr. Oppenheimer, the well-known specialist, read a paper of much interest and practical value to general practitioners, his subject being, "Headaches and other Nervous Symptoms caused by Functional Anomalies of the Eye." The effect upon health of errors of refraction, such as myopia and hyperopia, he said, had been so extensively

discussed that the necessity for their correction was now generally recognized; and his object, therefore, was to direct attention to the functional errors only. Eye-strain, although frequently overlooked by the busy family physician, was a not uncommon cause of headache, and by its early recognition many a patient might be spared the fruitless use of a long list of remedies in the attempt to secure relief. A number of the best neurologists and general practitioners, however, had gradually during the last few years come to an appreciation of the fact that a considerable proportion of these cases of headache, neurasthenia, insomnia, etc., depend on some functional disturbances about the eyes; and it had been a matter of surprise to oculists even to discover how many of the merely functional derangements of the nervous system, seemingly unconnected with the functions of the eyes, could be relieved by the careful study and treatment of the muscular apparatus of these organs.

Before alluding more particularly to the various symptoms which he had noticed as existing in connection with muscular asthenopia, and which subsequently disappeared, completely or partially, under treatment directed towards the restoration of the muscular balance, he referred to some points in the anatomy and physiology of the ocular muscles, and called special attention to the fact that in all its actions each muscle was steadied and balanced by more or less action of the opposing muscle, and that all the muscles of the eyeball contributed to the steadiness of its motion and the maintenance of its positions. It was to be remembered, he said, that each eye has to be directed to a nicety in order that the image shall fall upon the most sensitive part of the retina, and that both eyes may see the same object, with the result of binocular vision, as it is called. It was also to be borne in mind that the tractor muscles of the two eyes are supplied by six different nerves, and that the failure or weakening of any one of these will disturb the harmonious working of both eyes. Hence it was a marvel, not that we sometimes have muscular insufficiencies and loss of balance, but that we ever have binocular vision at all.

A muscle was clearly insufficient, he went on to say, which could not hold the eye in its proper place against its antagonist and allowed this antagonist to draw the eye to its own side, thus causing a squint. But technically a muscle was said to be insufficient when it could do its work, but did it under such a strain as to cause unpleasant symptoms and sensations. Having described the method of testing for muscular insufficiency, and its variety and degree when present, with prisms, he remarked that the condition of the muscles naturally varied in the same individual at different times and in differing conditions of health. There was, so far as his experience went, no observable relation between the severity of the symptoms present and the degree of insufficiency; and some people went comfortably about their business with an amount of insufficiency that would drive those of a more nervous organization to distraction.

In most cases that had come under his observation there was some trouble of refraction complicating the muscular difficulty, and in quite a number of them, as he believed, causing it. The headache, which was perhaps the most constant symptom, was by no means confined to the frontal or temporal regions, as might be expected, but might be general, or possibly referred to the vertex or occiput. The pain might be constant, or come on with the use of the eyes, or perhaps only after the eyes had been used for some hours. In some instances it was of a neuralgic character and very severe. Another quite frequent symptom was inability, or loss of disposition, to use the mind; and, strange to say, patients thus affected are the ones most apt to complain also of insomnia. Dizziness, or some form of vertigo, was also a common symptom, and it was sure to be complained of where the muscles were barely able to maintain an equilibrium; so that the least lapse would bring on diplopia. In one case severe tinnitus aurium, in addition to headache and dizziness, was promptly relieved by the wearing of appropriate glasses. Those who derived great pleasure from reading were apt to be depressed on discovering that they were no longer able to use their eyes *ad libitum*, and this depression was likely to produce in persons of a nervous temperament all sorts of neurasthenic symptoms. A radical change was often observed in this class of patients as soon as they found that they could use their eyes with comfort again.

In regard to the treatment, Dr. Oppenheimer took a very common-sense view which commended itself strongly to those present, and he did not hesitate to express his pronounced disapproval of the teachings of Dr. George Stevens, the well-known champion of tenotomy. He quoted a paragraph from a recent article of Dr. Stevens in the *Archives of Ophthalmology*, the gist of which was as follows: If there is a lateral balance and a vertical balance to your test, but the outer muscles do not appear quite as strong as they should be, according to an arbitrary standard; and if you do not increase the strength of these supposedly weak muscles by practice of a few minutes at a time for several days, and do not succeed in awakening them either by resting them or letting prisms do their work for them—then an operation is undoubtedly permissible. If, said Dr. Oppenheimer, we remembered that this operation would be a tenotomy of the internus muscle, the muscle which of all others needed to be strong in order to converge properly, and that there was more or less convergence required for all distances within 20 feet (which meant, in a city, almost all the

time), we got an idea to what a dangerous extent a hobby could be ridden. In such a case he himself would say: If a weak prism, worn for a few days, gives relief, let the patient continue to wear it, and when it ceases to answer, increase its strength as required. So far from setting up an absolute standard for the strength of each set of muscles, and dividing tendons until this standard was reached, he believed it was as irrational to set up a standard of muscular power, and call deviations from this abnormal, as to set up a standard of weight for an adult man and call every one not coming up to this weight atrophic. He did not wish to have it inferred, however, that he did not tenotomize the internus for a pronounced insufficiency of the externus. He had certainly had some excellent results from doing this when he thought it really indicated; but he said he did not operate for ailments imagined by the patient or the physician, nor did he claim to make effectual cures of epilepsy or chorea by performing tenotomy.

Having given the details of his method of treating these cases of eye-strain for headaches and other nervous symptoms, he summed up the treatment as follows:

1. All hygienic and medical indications to be carefully carried out by the attending physician.

2. A most careful correction of the refraction and accommodation (which in itself is not infrequently sufficient to effect a cure).

3. Correction of muscular insufficiencies, begin with a less degree of strength than apparently necessary, and increased if this should prove insufficient.

4. Tenotomy, if prisms do not relieve, or if they cause too much discomfort of themselves.

And, finally, when the patient can use his eyes with comfort with the correction given him, I rest satisfied, and cannot think any operation justifiable under these conditions.

When it was necessary to use prisms of such high degree as to give the patient the uncomfortable sense of everything being convex or concave, he advised tenotomy, and in performing this he follows the method of Snellen; beginning at the middle of the tendon and gradually cutting outward as far as might be required. In the slighter grades of insufficiency he greatly preferred the use of prisms to tenotomy for the following reasons: 1. It was the easiest for the patient. 2. It was usually sufficient to restore the patient to the comfortable use of his eyes. 3. Restoration to perfect health and condition quite often restored the equilibrium of the muscles, and a tenotomy might under those circumstances incline the balance in the opposite direction. In this connection he said that he could not too strongly express his conviction that out-of-door exercise and all other hygienic and medical means to restore the general health are most important adjuvants to the special treatment.

The sudden death of Professor Henry B. Sands, the eminent surgeon, in the prime of his powers, was a great shock, not only to every medical man, but to the entire community here, where he was so widely known and so highly esteemed. On Sunday morning, November 18, Dr. Sands attended service, as usual, at the Broadway Tabernacle, and, after a hearty meal, started out with Dr. H. H. Smith to see a case of hip disease in Jersey City upon which he had operated three weeks before. He was apparently in the best of health, but on his return, while riding up Fifth Avenue in his carriage, with Dr. Smith, he seemed to be seized with a sudden sense of suffocation, and in less than three minutes had died in the latter's arms. In the meanwhile there had gathered at Dr. Sands home, in 33d street, a company of gentlemen, about forty in number, composed of physicians, members of the Sextet Club, of the Philharmonic Society, and other friends, to enjoy a musical afternoon; and their consternation may well be imagined when the carriage arrived with his dead body. It was at first supposed that the cause of death was apoplexy, but the autopsy, conducted by Drs. Delafield and Peabody, showed it to be the result of heart-failure. The funeral services were held at the Broadway Tabernacle, on the 21st, and were attended by the Faculty and students of the College of Physicians and Surgeons, with which he had so long been identified, large delegations from the Academy of Medicine and Medical Society of the County of New York, and a vast concourse of the general public including many of the most prominent citizens. The Rev. Dr. Wm. M. Taylor, pastor of the Tabernacle, pronounced an eulogy, and in the course of it he stated that Dr. Sands had in mind the erection of an operating theatre at Roosevelt Hospital. "Now that he is gone," said Dr. Taylor, "his brotherhood could erect no more fitting monument to the memory of an eminent surgeon than by giving to Roosevelt Hospital the addition suggested." Unlike the majority, perhaps, of the medical men of New York who have attained the highest rank, Dr. Sands was a native of the city, and this community, therefore, has all the greater reason to be proud of his illustrious achievements and to hold his memory dear. P. B. P.

The American Academy of Medicine.

Dear Sir:—Many members of the profession will be at one with the opinions expressed in the leader in last week's JOURNAL in regard to the American Academy of Medicine. In reading the report of the proceedings of the Academy in THE JOURNAL of Dec. 8, I was struck by several facts. *First*, the tendency on the part of members of that body to self-adulation. *Second*, the paucity of papers in regard to education. *Third*, the over-exclusiveness of the Academy.

I have watched the Academy for several years. My interest in it was first aroused because of its membership being limited to physicians that have taken the A.B. or M.D. degree in course. This, I admit, prejudiced me somewhat against the Academy, since I am so much of a heretic as to believe that a scientific rather than a classical education is the best preliminary to the study of medicine, notwithstanding Dr. George Jackson Fisher's statement that "The Famous Historic Masters of the Healing Art were men of Classical Education." Men of broad, classical and scientific, education have expressen their conviction that a scientific education *is* a better preparation for the study of medicine than a classical education. That a classical education *was* the best preparation a century ago may be a fact; but the argument is as to the present. Modern science is, we may say, but a little more than half a century old, and the conclusions in regard to what was will not hold for what is. Were Michael Faraday alive to-day, and an American physician, he would be ineligible to the Academy. Were Pasteur an American physician he might knock at the doors of the Academy in vain, for he has no classical education. The classical-education ideas of to-day are burying original investigators that might be, and retarding the progress of scientific medicine. To be an investigator—to be a Naturalist—the physician must be a student of nature, and the classical education is a fetter from which one attempts almost in vain to break loose. It drills the young and growing mind to accept as true what is seen in print, and to regard natural laws as analogues of grammatical rules.

We all admit that medicine is founded on scientific facts—not on classical facts nor on classical knowledge. It is idle to argue that a classical—Latin, Greek and mathematical—education is the best for training the mind. One that holds this antiquated opinion shows an unfamiliarity with the laws of the human mind, so far as known, and should study the matter before claiming consideration for his views. The position of the Academy, then, in excluding physicians with scientific degrees, but without the classical A.B. and A.M. degrees, is a false position, and one that must create a large amount of prejudice against the Academy. For example: the writer has the classical A.M. degree, and is eligible to membership in the Academy. He has never asked for admission, however, because he is aware of two facts: 1. There are better educated men, without any classical degree, and with scientific degrees, who cannot be admitted to the Academy. 2. It is a constant source of regret to him that he was forced through the stereotyped classical course, without adequate scientific training, when he felt, long before he studied medicine, that a good scientific course was the proper training for the study of medicine. He is still of the same opinion, strengthened by experience and a knowledge of his really defective education; and to become a member of the Academy would place him in the position of believing what he does not believe.

One would think that a Society, the purpose of which is to assist in raising the standard of medical education, could employ its time better than in listening to papers on "The Causes and Prevention of the Opium Habit," "The Treatment of Uterine Diseases by other than Surgical Means," etc. The range of subjects connected with medical education, and preliminary education, is surely broad enough to allow the Academy to have an interesting meeting without troubling itself with questions of therapeutics. So far as the medical schools are concerned, there is pressing need for *practical* study, and Dr. Parvin may be congratulated as having read the only paper, at the recent meeting of the Academy, that has a real and logical connection with the subject of higher medical education. A few words in regard to practical surgery, or practical work in the clinics, would have been much more to the point than "A Few Words Concerning the Academy." The relations between scientific training and logical thinking are more to the point than "The Relations between the General Practitioner and the Consultant or Specialist." That there is a field for the Academy there is no doubt; but it seems that it spends too much time ontside its legitimate field.

ARTIUM MAGISTER.

BOOK REVIEWS.

A SYNOPSIS OF THE MEDICAL BOTANY OF THE UNITED STATES. By J. M. G. CARTER, M.A., M.D., Ph.D., Sc.D., Member of the American Medical Association; the Illinois State Medical Society; the Chicago Medical Society; the Chicago Academy of Sciences, etc. St. Louis, Mo.: Geo. H. Field, B.S., M.D., Publisher. 1888.

This is a monograph of 176 pages, in good type and paper. It contains a carefully classified list of the plants and shrubs of the United States reputed to contain medicinal properties of some value; and the supposed properties of each are briefly stated. It contains a list of the abreviations of authors, a table of orders, an index of both generic and common names, and an index of diseases. In the introduction it is stated that the medicinal plants of the United States embrace about 140 orders; 620 genera, and more than 1,300 species and varieties. The author has expended much time and labor in the preparation of this work, and it will be found very convenient and valuable for reference.

A COMPENDIUM OF DENTISTRY for the Use of Students and Practitioners. By JUL. PARREIDT, Dental Surgeon in the Surgical Polyclinic of the University of Leipzig, etc. Authorized Translation by LOUIS OTTOFY, D.D.S., Lecturer on Physiology, Chicago College of Dental Surgery. With Notes and Additions by G. V. BLACK, M.D., D.D.S., Professor of Pathology, Chicago College of Dental Surgery. 8vo, pp. ix–229. With numerous illustrations. Chicago: W. T. Keener. 1889. Price $2.50.

From the author's preface it appears that he regrets that the general practitioner so much neglects the specialty of dental science. He believes that the practicing physician should be acquainted with the indications for operations on the teeth, and that he should know enough of dentistry to be able to give advice or express an opinion in matters pertaining to the specialty. This book, then, is written in great part for the physician. The translator, as may be seen by comparing the original work and the translation, has done his work well. The notes by Dr. Black form a valuable addition to the work. The book is profusely and well illustrated.

BRYCE'S VISITING LIST AND POCKET RECORD, Good for any Month or Year. Edited and Published by C. A. Bryce, M.D., Richmond, Va. *The Southern Clinic* Print, 1888. Price, $1.00, postage paid.

This is decidedly one of the most convenient and valuable of the many *Pocket Visiting Lists* to be found in the market.

MISCELLANEOUS.

THE HEALTH DEPARTMENT OF MINNEAPOLIS.—Health Officer Kilvington has directed a letter to the new members of the council, proposing a plan whereby a very material reduction can be made in the expenses of the health department. The annual expense of the department at present is $19,760, distributed as follows: Health officer, $2,000; assistant, a medical inspector, $900; clerk, $500; 13 ward health inspectors at $720 each, $9,360; quarantine physician, $1,000; city physician, $1,500; assistant city physician, $900; police surgeon, $900; two meat inspectors, $2,700.

Dr. Kilvington makes several points as follows: That the present force of health inspectors is made up of men untrained and incompetent to perform the work required of them and that a small, but efficient force, can manage the sanitary affairs of the city. The special quarantine physician is absolutely unnecessary. He proposes that the city be divided into five health districts and a man for each district who shall be chosen by competitive examination. At present there are but two city physicians to visit and care for the sick over a territory of 53 square miles, which is a physically impossible task. He calls particular attention to the food inspection, which should embrace all kinds of provisions, but is now confined to the optical inspection only of meats. He would have a force of five nuisance and two inspectors whose duties would be to inspect all kinds of food stuffs, and the investigation and abatement of nuisances under the control of the board of health. A professional chemist and microscopist should be engaged for the examination of foods and drinking water. Another important provision is that the city scavengers be placed under the control of the board of health, and that body have power to revoke their licenses for non-compliance with the sanitary regulations of the city. The disposition of garbage can be made self-sustaining under such a system. He estimates that the reorganization of the health office can be effected at the following figures: Health officer, $2,000; five medical inspectors, $1,000 each, $5,000; five food and nuisance inspectors, each $900, $4,500; chemist, $600; microscopist, $600; office clerk, $500; a total of $13,200, and a saving to the city as it is now operated of $6,560.

DISTRIBUTION OF CONSUMPTION IN NEW HAMPSHIRE.—The extent and distribution of consumption in New Hampshire are admirably set forth in a paper by Dr. Irving A. Watson, the Secretary of the Board of Health of that State. The prevalence and fatality of this disease are illustrated by a number of diagrams. From the figures quoted by the author of the paper, it appears that during the three years 1885–87 there were in the State 2,432 deaths from consumption. It is interesting to compare with this the deaths from other forms of disease. From heart disease there were 1,536 deaths; pneumonia, 1,526; apoplexy and paralysis, 1,421; old age, 1,347; cholera infantum, 918; cancer, 637; typhoid fever, 464; diphtheria, 411. From a careful study of consumption in New Hampshire for the past six years, but more especially from the registration returns of the years 1885, 1886, and 1887, the following conclusions are arrived at:

1. The disease prevails in all parts of the State, but is apparently influenced by topographical conditions, being greater at a low elevation with a maximum soil-moisture, than in the higher elevations with a less moist soil. The prevalence of other diseases also affects the death-rate from consumption.

2. That the season has only a small influence upon the mortality from this disease. The popular idea that the fatality is greatest in winter is shown to be erroneous, the greatest number of deaths occurring in May.

3. That the mortality is considerably greater in the female sex.

4. That no age is exempt from this disease, but that the least liability of its development exists between the ages of two and fifteen, and the greatest number between twenty and thirty. Advanced age does not assure any immunity from the disease, as is generally supposed, but the smaller number of decedents is due to the fewer living persons at that advanced period of life.

5. The death-rate from pulmonary consumption is relatively much the larger among the foreign-born.

6. The average death-rate from consumption for the years 1885, 1886, and 1887, is 12.86 per cent. of the total mortality of the State. In Massachusetts, for the ten years ending 1886, deaths from consumption averaged 16.10 per cent. of the total mortality; and in Rhode Island, for a period of twenty-five years, ending 1884, 16.30 per cent. This shows a greater freedom from the disease in New Hampshire than in the two States mentioned.—*Science.*

DISINFECTING LETTERS.—The *American Analyst* describes as follows the method adopted by the United States Government for the disinfection of letters coming from districts in which yellow fever prevails. Letters from the stricken section are fumigated in a novel way, so that there is little or no chance for the disease being brought northward. The letters are all stopped when they reach the quarantine lines. Each letter is put under a machine with a long arm attached, and this is provided with little teeth punctured at the ends. A powder that is used for fumigating purposes is forced through the arm and down

through the teeth. The arm comes down on each letter, and, while the little teeth are perforating the letter, the powder is blown in between the sheets, disinfecting the letter thoroughly. We had understood that after the perforations were made the letters were exposed to the fumes of burning sulphur. If the *Analyst* is correct in its statement, it would be a satisfaction to know what the powder is which disinfects the letters so thoroughly. So far as we know, there is no powder which has this power when applied in the manner described, and, until we receive further information, we shall look upon the whole process with distrust.—*Science.*

IN THE INTEREST OF THE INSANE.—A conference of the managers and superintendents of the New York State lunatic asylums was held at the asylum in Utica on Dec. 7, in response to a call recently issued by President P. V. Rogers, of the Utica board of managers. The conference was intended to promote an interchange of experiences and the discussion of methods best suited to an enlightened administration of the several asylums, and in the belief that such a conference would contribute to the advancement and elevation of the standard of management in each of these State institutions. Superintendent J. B. Andrews, of Buffalo, read a paper on "State *vs.* County Care," of which the following is an abstract:

Every State should have a definite and settled policy regarding the care of its insane. As early as 1831, before there were any State asylums, a legislative commission recommended the erection of institutions of sufficient dimensions and numbers to accommodate all the insane. The convention of superintendents of the poor in 1855, passed resolutions that the State should care for all of its insane, and that none of them should be treated in county poor houses. Dr. Gray favored this plan. Dr. Willard, in his report for 1865 to the Legislature, of the investigation of the county houses, gave the number of the insane inmates as 1,300. Public sentiment was so aroused that provision was made for the erection of an additional asylum. Other like institutions followed in due time, but they have not kept pace with the increasing amount of lunacy, and there are to-day in the county asylums outside of the municipal institutions of New York city more than 2,500, almost twice the number reported by Dr. Willard in 1865. These figures show how far short we have come of the standard persistently advocated by the various official bodies of the State. Since their organization in 1867, the State Board of Charities has advocated that the State should assume entire care of the insane, and permissions to do otherwise were only intended to be temporary. The doctor gave clearly and at some length various reasons why the insane are better cared for in State institutions than is possible in county institutions. The chronic insane require a supervision and oversight which cannot be extended to them in association with other paupers. The sentiment for the last fifty years expressed by those in positions of authority has favored the policy of State care. There should be some definite policy adopted and carried out by the State. It is able to do it, and it is a duty which in justice it has no right to shirk.

The following resolutions were adopted:

WHEREAS, Unusual and universal interest has been awakened of late in regard to the care and custody of the dependent insane in the State of New York; and

WHEREAS, Such dependent insane have always been regarded as the wards of the State, and

WHEREAS, It would be prejudicial to the true interests of the insane to depart from this humane conception of their rights;

Resolved, (1) That it is the sense of this joint conference of trustees and superintendents of the State asylums for the insane, that the State should have a definite and settled policy with reference to the dependent insane;

2. That such policy should include as its most important and vital principle the care of all its dependent insane in institutions established and controlled by the State.

THE OFFSPRING OF RABID ANIMALS.—Some observations made by Dr. G. Zagari appear to prove that rabies is not, as a general rule at least, communicated by pregnant animals to their offspring. He experimented with guinea-pigs (six), rabbits (five), and once bitch, and tested the virulence in the thirty-two fœtus removed from the body of these animals while suffering from rabies (which generally causes abortion at an early date). In no case was it found to be capable of producing rabies when inoculated; the amniotic fluid, the placenta, the liver, and finally an emulsion made from the whole body of a fœtus were found not to be virulent. In like manner, the milk yielded by the bitch and by two rabbits were found not to be virulent. Dr. Zagari (an abstract of whose paper in the *Giorn. int. d. Scienze Med.* is published in the *Cent. f. Klin. Med.*, 1888, No. 48), considers that the negative results of his researches lends support to the theory that the virus of rabies exists in the nervous system and not in the blood.—*British Medical Journal*, Dec. 8, 1888.

DEATH BY A RARE ACCIDENT.—A little son of Dr. Mueller, of Germantown, was remarkably injured by the rib of an umbrella five weeks ago, and died on December 8. The lad at the time was returning from school, and one of the ribs of an umbrella he carried was loose and dangled. While playfully throwing the umbrella up in the air and catching it by the handle as it fell he missed once, and the loose rib ran up his nostril, causing his nose to bleed freely. On the same evening, after supper, he complained of pains in his head and was put to bed by his father. During the night his breathing was unnatural, and when examined by his father he was found to be unconscious. The physician applied all the proper restoratives without effect and, thoroughly alarmed for his boy's safety, summoned several eminent medical men, among them Dr. Agnew. In view of the history of the case the physicians decided that the rib had extended sufficiently far up the nose to penetrate the brain. After he had lain unconscious for several days an operation was performed, which only resulted in temporary relief.

AN EXPERIMENT IN HYDROPHOBIA.—A very interesting experiment is now being performed in New Jersey on a couple of thoroughbred dogs which were bitten by a mad dog in Philadelphia. The animals were bitten first in the morning at 9 o'clock and then again at 6 o'clock. They were badly lacerated on both the neck and legs. It occurred to a Philadelphia physician that it would be an excellent case for experimenting. The two bitten dogs have been placed in a kennel and yard built especially for them, and guarded in every possible manner against escape. They will be fed exactly the same as the other dogs on the farm; in fact, they will be treated in exactly the same manner as though nothing was expected. From day to day they will be visited by expert dog fanciers and physicians and any change will be particularly noted. Provided the dogs do not show any signs of rabies within a period of three months they will be set at liberty, as incubation is supposed to set in within ten days, but by keeping them under strict surveillance for three months a sufficient time will have elapsed for the determination of the experiment.

DIPHTHERIA ON STATEN ISLAND.—An epidemic of diphtheria which broke out some weeks ago in Tottenville, S. I., threatens to assume serious proportions throughout the island. The first case reported was that of the 5-year old child of Benjamin E. Streeter, proprietor of the West End Hotel, who died after a five days' illness. The disease speedily gained ground in the village. Case after case was reported, both among children and adults, and the efforts of the Board of Health to stay the malady have so far been fruitless. Eighteen new cases were reported at the beginning of the week of December 7, and most of the prominent families in the village have some dead ones to mourn. In one family eight children lie

dangerously sick. From Tottenville the disease has spread to Pleasant Plains, Elkinville, Garretsons, Stapleton, Clifton, Tompkinsville and New Brighton. In these places cases are rapidly increasing. The schools are closed, and the churches will also be closed should the disease not abate.

FATIGUE FROM THE USE OF THE TELEPHONE.—At the meeting of the American Otological Society in Washington, Dr. Clarence J. Blake, of Boston, read a paper on the influence of the use of the telephone on hearing-power. He thinks that this influence must be injurious, because the extremely low intensity, as demonstrated by experiment, of the sounds to be caught from the telephone, compelled a strain of the ear which soon fatigued it, and made it especially liable to injury by the accidental sounds of comparatively high intensity which were constantly liable to be heard. Dr. C. H. Burnett said he had seen several patients who believed that the continued use of the telephone had impaired their hearing. Dr. O. D. Pomeroy gave the case of a patient who said the use of the telephone fatigued her very much, and she thought had made her decidedly worse.

A STATE BOARD OF HEALTH FOR GEORGIA.—DR. SIMS, the member of the Legislature from Lincoln, has in course of preparation a bill creating a State Board of Health. The bill will provide for a board consisting of five physicians in good standing, who will have charge of the quarantine regulations of the State, without, however, clashing with the authority of the local boards.

The measure is the result of a general discussion in the Committee on Sanitation and Hygiene, of the recent epidemic in Jacksonville and of the great variety of quarantine regulations in different parts of the State. One result of the creation of a State Board of Health will be to make uniform the quarantine regulations. The friends of the measure believe that the presence of a State Board will do much to allay the excitement incident upon epidemics.

AN ANIMAL HOSPITAL.—The Trustees of the University of Pennsylvania have determined to build a large hospital and stable for the treatment of diseases of dogs, horses, cows, and other domestic animals. There are more fancy cattle owned around Philadelphia, it is said, than about any other city except Boston, and some of the finest die from want of surgical care. A special department is to be devoted to the care of pet and sporting dogs. A well-known Philadelphia lady proposes endowing a department for cats. The Society for the Prevention of Cruelty to Animals and the Anti-Vivisection both oppose the project.

DR. CHARLES B. WRIGHT, a leading physician of Freeport, Ill., died suddenly of heart disease on December 12. He was born in New York in 1820. Besides being a successful physician he was educated for the law, and for five years filled with honor the office of County Judge.

DR. GEO. F. HUNT, of West Bend, Wis., died on Dec. 10. He was graduated from the College of Physicians and Surgeons of New York City in 1856. He was a State Senator in 1881–82.

WOMEN IN THE PROFESSIONS.—According to the Rev. Elizabeth W. Greenwood, there are 2,432 physicians and surgeons, 105 ministers and 75 lawyers in this country who are women.

DR. HOMER O. HITCHCOCK, of Kalamazoo, died on Dec. 8. He was born in 1827. He was graduated from the College of Physicians and Surgeons of New York in 1855.

GIFT TO THE WORCESTER CITY HOSPITAL.—The Armenians of Worcester, Mass., recently made up a purse of $200 and presented it to the City Hospital.

DR. HENRY LEFFMANN has been elected Pathological Chemist of the Jefferson Medical College Hospital.

DR. JOHN NORTH, of Keokuk, Kansas, will remove to Toledo in a few months.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from December 8, 1888, to December 14, 1888.

By direction of the Secretary of War, Col. Jedediah H. Baxter, Chief Medical Purveyor, will proceed to St. Louis, Mo., and Hot Springs, Ark., on public business connected with the Medical Department, on completion thereof to return to his proper station. Par. 13, S. O. 289, A. G. O., Washington, December 12, 1888.

Major Francis L. Town, Surgeon, is relieved from duty at the post of San Antonio, Tex., and will report in person to the commanding officer Presidio of San Francisco, Cal., for duty at that station, relieving Major Henry R. Tilton, Surgeon, and by letter to the commanding General Dept. of Cal. Par. 19, S. O. 286, A. G. O., Washington, D. C., December 8, 1888.

Major Tilton, upon being relieved by Major Town, will proceed to West Point, N. Y., and report in person to the Superintendent of the U. S. Military Academy for duty at that station, relieving Major Charles F. Heizmann, Surgeon. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Major Heizmann, upon being relieved by Major Tilton, will proceed to San Antonio, Texas, and report in person to the commanding officer of that post for duty, and by letter to the commanding General Dept. of Texas. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Capt. James A. Finley, Asst. Surgeon, is relieved from duty at Ft. Buford, D. T., to take effect upon the expiration of his present sick leave of absence, and will report in person to the commanding officer at Ft. Assiniboine, M. T., for duty at that post. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Capt. Alonzo R. Chapin, Asst. Surgeon U. S. Army, is granted leave of absence for fourteen days, to commence on or about December 24, 1888. Par. 1, S. O. 261, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, December 11, 1888.

Capt. Richard D. Johnson, Asst. Surgeon, is relieved from duty at Ft. Adams, R. I., and will report in person to the Superintendent of the U. S. Military Academy, West Point, N. Y., for temporary duty at that station. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending December 15, 1888.

Surgeon Thomas N. Penrose, ordered for examination preliminary to promotion.

Medical Inspector A. S. Oberly, ordered before the Retiring Board.

P. A. Surgeon S. H. Dickson, detached from the "Richmond" and to the "Pensacola."

P. A. Surgeon Richard Ashbridge, detached from the "St. Louis" and to the "Richmond."

Asst. Surgeon Ernest W. Auzal, promoted to P. A. Surgeon.

Asst. Surgeon F. W. F. Wieber, promoted to P. A. Surgeon.

CORRIGENDA.

In the report of the discussion of the paper entitled "The Medico-Legal Aspects of some Injuries of the Spinal Cord," the last line, p. 856, should read, "Spinal concussion can be as limited as concussion of the brain is." In the 13th line from top 2d col. p. 856, for "should" read "from." In the 7th line, "or" should follow the word "ataxia," and the sentence close with "perverted sensations." In line 22 is printed "commotio cerebri" instead of "commotio spinalis."